THE

SOUTHERN AGRICULTURIST.

NOVEMBER, 1835.

PART I.

ORIGINAL COMMUNICATIONS.

An Address delivered before the Agricultural Society of South-Carolina, at the anniversary meeting, August 18th, 1835; by JOHN S. BRISBANE, Esq.

(Concluded from page 513.)

In the first instance of defectiveness in our system of Agriculture, let me call your attention, particularly to the subject of *provisions*. Gentlemen, it is mortifying to my pride as a South-Carolinian, to say that this State, which has shone so brilliantly among her sisters, from the first organization of the Federal Congress, and has done what no other has, produced a President and a Vice-President at the same time,—this State, so famed for its immense exportation, pursues a system so defective, as to be dependent for her daily food upon an easterly wind. Does this proceed from the sterility of our soil, or the density of our population? Neither! We have thousands of acres untilled, that would produce ten times as much as we could consume, and a thinner population than any other Atlantic State. How are we to account for this fact, but by the inference of bad management. A man, with a horse and plough properly fixed, will cultivate twenty-five acres of provisions (corn and peas,) an acre will produce twenty-five bushels of grain, and eight hundred weight of fodder, if manured; and twelve bushels of grain and five hun-

dred weight of fodder if not; and that is, in one case six hundred and twenty-five bushels of grain, and twenty thousand weight of fodder, and in the other, three hundred of grain, and twelve thousand and fifty of fodder, to the man, who, by the aid of a cart, can gradually manure his land through the winter. We will, however, take a medium quantity, and say, that after deducting one hundred bushels for himself and horse, and four thousand weight of fodder, he makes nett, four hundred bushels and ten thousand weight of fodder for the use of others. Must there not be some defect in our system that obliges us to be dependent on our Northern neighbours for these two essential articles? We will examine the principal argument that supports this procedure. It is this. Mr. A, B, and C, make twelve or fifteen barrels of rice to the hand, and prefer buying provisions to making them. Why should I not do the same? The simple answer is this, because you and I are not Mr. A, B, and C. As applying to them, the argument is good, but we, unfortunately, are much lower in the alphabet. The bugs arose in the spring, when the river was salt, and we could not flow, as the freshes arose in the fall and flowed too much. Or the driver kept the water on too long and destroyed the rice; or the overseer got drunk, and run the negroes into the woods, and the grass destroyed the crop; or some one of those accidents did occur which no one could foresee, but which so often do occur, without being foreseen; that with our expectation of a crop, destroys the application of the argument to us. And after the few Irish potatoes, and early peas, and other miserable substitutes for substantial food are exhausted, we are reduced to send to our factors for *Northern corn*. The factor is gone to enjoy himself at Sullivan's-Island, the boat comes without a supply, and we are reduced to the wretched shift of borrowing a few bushels from some neighbour, more judicious than ourselves, until another trip of the boat.

Gentlemen, is this picture too highly coloured? I hope and believe we may say "thank God, it is not so with us." But have you not heard of it? I have. A gentleman, high in office, and higher in merit, said the other day, upon being informed that corn was above a dollar, and little to be had, until the wind came round to the east, "*would to God, that cotton was down to six cents.*" Upon

the same principle, and at the same ratio, he might have added, *and rice to one dollar.* Meaning that nothing but so great a depression of the staple articles would put a stop to the infatuation of neglecting *provisions.* And are the high toned sons of South-Carolina, who speculatively scorn every species of meanness, guilty of the sordid act of risking the starvation of their household, for the chance of making a little more money to buy a few more negroes, or perhaps, to spend at the North. They will repine at the little labour that will insure them provisions, that they might make a little more rice or cotton, not near so much required.

I have proved that one man may make four hundred bushels of grain more than he can consume. There is but one acre in twelve, in this State, under cultivation; supposing that one-half only of the balance is fit for it, we have five times the quantity of land that we require. At present, four acres for cotton and seven for rice, is a large allowance, but twenty-five would be required for provisions: still we have above four to one more than is called for; therefore, it is not the want of land. I was some time since on the plantation of a gentleman, on the upper part of the Santee, who appropriated four hands, and one hundred acres of land, exclusively, to provisions. I never heard of his buying Northern corn. Nine months since a war with France was as little thought of here, as a war is with any other power, and yet it was very near occuring. Supposing it had taken place, and a fleet had been stationed off our shores, (a very probable measure) to what a state would we have been reduced. It would have been much worse than the want of an easterly wind, as it probably would have lasted for the whole season. It might be answered that we could have fed upon rice; but there was not, at that time, rice enough in the State, and if there had been, it would soon have risen beyond the means of the people, generally, to purchase. So much am I convinced of the disadvantages of living in a state of dependence upon the North for provisions, that I feel disposed to exclaim, O could I wield the power of Bonaparte, I would oblige every man to plant his provisions, even Mr. A, B, and C, as an example to others; or, had I influence with a power still more omnipotent, with us republicans, I would request my fair country women to smile upon no one who did not do so.

I have given the most prominent reasons to prove that our present system of Agriculture is defective. It probably may be expected that I should endeavour to point out, as being more pertinent, the remedy. I do not arrogate that ability. I have said that Agriculture, as a system, is literally inductive. No hypothesis, however plausible, should be admitted in its investigation. The theologian may roam from Genesis to Revelations, the Physician from Hypocrates to Rush, the Lawyers from Justinian to Livingston, the Statesman from Cicero to Calhoun; and yet find authority for the utmost flight of an inventive imagination; but the planter, to become worthy of attention, must produce his facts. It will not be sufficient to say, that Columella recommends such a thing to the Romans, or Jethro Tull to the British; the answer is, that the cases are analogous, we plant a different country from either. What might have been proper for them, may be the reverse for us. Nor can we even quote Buel or Peters, as they write for those who cultivate a different soil, in a different clime, and a different plant.

To satisfy myself that my opinion was worthy of your attention, I must support it by the developement of facts, that my confined sphere of action renders me inadequate to. Indeed, such is the complication and variety of means to obtain the same ends, that I cannot conceive of a satisfactory result. Suppose, for instance, that we wish to know the best quantity of seed to a given quantity of land. In order to ascertain it, we plant a part of an acre similar in quality throughout, with six pecks of seed, a part with seven, and so on, up to twelve, the utmost quantity recommended; and that the part planted with eight should yield the greatest product. That would not be satisfactory, for that might not have been the case if the land had been much richer, or had been treated in a different manner; for instance, the water put on earlier, or kept on much longer—and this must necessarily be the result of every experiment. Let us pursue the practical effect further. My neighbour, finding that eight pecks had produced most, plants his crop by that measure, and plants seven acres to the hand, flows very early, and keeps on the water so long as to give no opportunity to his rice to tillure. He finds his crop too thin. My next neighbour plants three acres to the hand, makes little use of water, but keeps his field in the order of a garden,

his rice throws out more ramifications than it can mature and he finds it too thick. Thus, no particular mode can be recommended, without so accurate a knowledge of the situation of others as no one can be supposed to possess.

There is not intended, by these arguments, the smallest discouragement in the recommendation to every one of a thorough knowledge of the general principles of Agriculture, and that cannot be obtained without a sufficient acquaintance with chymistry. With this, combined information, the planter is placed in the situation of an able general, who is perfect master of military tactics. He is enabled to make the most of every incident, however extraneous, which might arise to throw him out of the prescribed tract. There is one part of the process which, at the first view, might be supposed to admit of certainty in the application, and is peculiar to the rice-plant, that is irrigation; and yet we find as great a diversity of opinion in that as upon any other operation. One forms his opinion of the time to flow from the state of its leaves, another from that of its roots, and a third from the quantity of grass that is in it. Indeed, so great is the deviation from any thing like certainty, that a friend of mine, as remarkable for the soundness of his judgment, as for his caustic humours on the deficiency of others, says that it is a doubt with him whether more injury is not done by the improper use of water, than all the good that is derived from it. It certainly would be a very beneficial act to young planters, if some one of known experience would prescribe such perspicuous rules as may be cognizable to every one, and I think the subject will admit of it.

I had thought of saying something in recommendation of an allotment of a part of the *cattle-farm* to the cultivation of exotic plants, to be obtained by our foreign secretary, through our public agents from foreign countries, but fear you will think that I have mounted my hobby to ride at the expense of your patience. However, there is a subject of too much general importance to be passed over in silence. Our Chief Magistrate in his inaugural speech, with his characteristic penetration, and in that energetic, though florid language, peculiar to himself, has said, in speaking of the interference of the North—"when these two elements of mischief and anarchy are 'combined, and shall be embodied by desperate politicians, 'into an organized political party, no human institution

'will be regarded as a guarantee of any human right, and 'the property holders of the North, so far from being able 'to do any thing to secure our property from these fanatics 'and plunderers, will tremble for the security of their own. 'How sacred then is the obligation of defending and pre-'serving an institution as essential to our liberty and exis-'tence, as it is obnoxious to the prejudices of those who 'have the greatest possible facilities for assailing it." Acceding to his positions, with the exception of the acerbity that tinges them, which are corroberated by the recent occurrences that have excited us so generally, I think that our conduct has not been impressed with that discretion that the occasion calls for. If the evil be increasing, and threatens all theSouthern and most of the Western States equally with ourselves, would it not be more prudent, instead of spending so much of our money, which itself aggravates the case, with those from whom we expect evil, to make ourselves better acquainted with our fellow sufferers? Nine-tenths of those who saunter in Broadway, lounge at Balston, and display their wealth every where to the envy of those who look with such malignant eyes at the source from which it is drawn, have no knowledge whatever of any other slave-holding State. Would it not be better to intertwine every cord of affection and intimacy as strongly as we can with those whose interests in this momentous subject are similar to our own. If health be the object of emigration, and we wish to visit the springs, are not those of Virginia and Georgia as efficacious as those of New-York? If the bracing effects of climate be desirable, what is equal to the mountain air of the Carolinas and Virginia? If we visit for beautiful scenery, although the falls of Georgia may not be on so grand a scale as those of Niagara, the scenery around is much more sublime. And if the refined pleasures of social converse be the object of pursuit, where can we find them equal to the upper parts of our own State, and the congregated halls at the springs of the old Dominion. To go to Baltimore takes as long as to go to New-York, so that it is not for sea air; indeed, we have a stronger proof of that, in the extra price which is now given to be carried there in as short a time as possible, and in vessels so crowded, that it must be qualified by passing through the lungs of several, before it can be respired by any one near the centre. It does

appear to me, that we gain in exchange for draining our State of so much money, no one thing that we could not enjoy to the south of the Potomac, but the gratification of showing to strangers that we can spend more in a month, than would maintain them for twelve. Every landlord from New-York to Boston knows that fact, and takes advantage of it. No inference is meant by these expressions to implicate the liberal portion of the North, their sentiments are too well known to us to allow of a thought of the kind. Among the many advantages arising from the rail-road, is the facility of drawing more closely the bands of intimacy and friendship with the Western States. Let us make it their interest to connect themselves with us, in every way which will be to our mutual interest. Instead of refusing to buy their stock, as was the case some time since, let us take not only what we want for our own consumption, but let us make Charleston the market for all the beef and bacon necessary for the consumption of the West-Indies. Lumber, rice, beef, bacon and butter, from our contiguity to those Islands, would give us the command of that market. The two former furnished by ourselves, and the latter through us by the Western States. This policy would convince them of the reciprocal advantages of a close connexion of interest, and secure to us a bulwark, upon that quarter, that would be impregnable.

If we must take the poisoned chalice to our lips, let us not accelerate by indiscretion its approach; but BY FIRMNESS AND PRUDENCE AVERT THE CATASTROPHE AS LONG AS POSSIBLE.

On Agriculturnl Libraries and Surveys.

To the Editor of the Southern Agriculturist.

Mr. Editor,—The declining condition of our Agricultural Societies, has been lately urged on the attention of your reading public, but as no *new* organization is proposed, and no *new* objects suggested for their attainment, what has been said seems likely to end in useless lamentation. The value of social meetings to those who live dispersed through the country, must be taken for granted. And it is equally evident, that punctual attendance at the meetings of a society, is essential to its existence. This is to be secured by furnishing a variety of interesting

motives to the diversity of temper and disposition among the members. It is proposed to add to the motives which now exist the pleasure and profit of a well selected Agricultural Library. This appears to promise a rallying point among others, and like all *common property*, one bond of union among the proprietors.

The money now bestowed by individuals upon a *few* papers devoted to agriculture, would, if methodically applied, acquire to each district or parish Society, the use of *all* those worth having, and should their use be regulated among the members by an alphabetical roster in succession, harmonious enjoyment would be secured, and new topics for trial and discussion provided.

By this means, without levying any additional tax upon the members, a collection of Periodicals would gradually be formed, every part of which would have been made familiar to each inhabitant, and on that account, produce more benefit generally, than a more formal and regular collection less known, should the funds of each district and parish Society extend to no greater acquisition than this, it would doubtless prove a centre of attraction, around which new sources of interest would gather, but in fact, the money now contributed, would go much farther, and enable the District and Parish Societies to collect the more important books of reference for the use of the members. These might be deposited at the residence of the Secretary and Treasury, and the convenience of having them under his roof, afford to that officer some compensation of a liberal character for the trouble he takes with his office. In addition to these collections dispersed through the country, the Societies in Columbia and Charleston, at any rate, *owe it to the cause*, to institute full and formal collection of books directly relating to agriculture, and of those incidentally affording light for its improvement, and these should be not only scientific, as botanical systems, for instance, but popular also, as books of travels, &c.

There is not, at present, a single collection of books in this State which deserves the name of an agricultural library; and as we insist strenuously and proudly upon our exclusive devotion to this art, it would become us to shew that, all means and appliances for its perfection, are accumulated among us. Until this can be shewn,

we subject ourselves to the reproach of an unenlightened charlatanism.

It ought not to escape attention that the deficiency cannot be supplied without drawing from other languages, their contributions. We ought to possess the means of comparing our practices with those of every similar climate and country in the world.

Suppose such collections to exist in the country and in the cities. Do they not at once suggest to the mind, the distinguished benefit which may be produced by a general fraternization? Delegates from the societies in the the country districts and parishes, might assemble in Columbia in the fall, and in Charleston in the spring, each delegation might be provided with an *Agricultural Survey* of its district, and circumstantial reports of the cultivation of plantations remarkable for good order and success, to be communicated to the principal societies; those from the upper division of the State, committed to the society at Columbia, those from the lower division, to the society at Charleston, to be digested and prepared for publication. In this way a mass of statistical information would be brought together, which might rival or excel the great books prepared by Arthur Young, and the English Board of Agriculture.

To the mind of every attentive reader will be suggested other sources of interest, which would naturally cluster around such collections and such meetings, and as a single example, the accumulation of valuable local maps, would do much good in giving notoriety to the boundaries in a neighbourhood. Mr. Thomas Gaillard, formerly of Pineville, and now of Alabama, collected together and mapped in connexion, the plans of all the tracts of land in his neighbourhood, so as to represent the boundary lines of every plantation. Mr. Dorrill, the Surveyor did the same thing on Daniel's Island, and his map has proved a peace-maker in two or three instances since. Many such documents exist in private hands, prepared by the accurate and indefatigable Purcell, and others. How interesting to each local society would such papers be, and how often would they prevent the endless hate, begotten of pride of territory in country neighbourhoods. X.

Note.—In the suggestions made by our correspondent, we concur, but despair of seeing so beneficial a plan carried out as it deserves.

unless adopted by some gentleman of influence and station. Our Lieutenant Governor has placed himself in the front rank of the agriculturists in this State, and with his zealous and efficient prosecution of the plan, we should expect success.—*Ed. So. Agr.*

On the Use of Pisé in constructing Houses and Fences.

Columbia, (S. C.) Sept. 1st. 1835.

To the Editor of the Southern Agriculturist.

Dear Sir,—You will see by the Resolution, a copy of which you will find here below, that you are requested to publish the accompanying "Address to the Standing Committee of the South-Carolina Society for the Advancement of Learning and the Diffusion of Knowledge."

N. HERBEMONT.

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At a meeting of the Standing Committee of Twelve, held on the 31st of August, 1835, the following Resolution was passed.

RESOLVED—That the Memoir on Pisé work be transmitted to the Editor of the *Southern Agriculturist*, with the request that he print it in his journal; and the Editor of the *Telescope* be requested to reprint it from the same.

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To the Standing Committee of the South-Carolina Society for the Advancement of Learning and the Diffusion of Knowledge.

GENTLEMEN,

The great zeal exhibited at the last meeting of our Society augurs well for its ultimate success in the furtherance of its objects, and the readiness with which gentlemen are subscribing for a fund for the purpose of erecting a suitable building for the accommodation of the Society, is a sure guarantee of the determination to persevere in so laudable an establishment. It has for its object the advancement of learning and of useful knowledge, based on the best established scientific principles. It would be vain to attempt to show the great benefits which our country is likely to derive from a zealous pursuit of the objects in view. These must be incalculable and we shall not be disappointed, let our expectations be ever so great; so that they are only within the bounds of practicability, if any thing approaching to the ardour now witnessed be persevered in.

As it seems that the first and principal object desired to be effected, is the erection of a suitable building for the accommodation of the Society, I beg leave to be

permitted to make a few observations that will tend to render this, our first act, as eminently useful as its nature admits. So far as it is possible, every step of such a society should be attended by a benefit rendered to the public. We expect, of course, that a building for such a society will be constructed according to the best models of architecture within our reach, and to join to the suitable convenience of its object, a specimen of pure and classical taste. Economy is one of the great requisites of great usefulness; for without it, it could not serve as a model and a lesson to the private citizen which he could prudently follow. I conceive it the duty of such a society. as this, not only to lead the taste and fashion in all that is elegant and useful; but also in the most economical methods of attaining these valuable objects.

There is a mode of constructing houses of various sorts, and also walls of enclosure practiced in various parts of Europe, particularly the southern parts of it, and also in South-America, which, if it were exhibited to our citizens for their imitation, would most probably be attended with the most extended benefits, both in town and country. This, in parts of the country where rail timber is either scarce or of bad quality, would supersede our rude, inefficient and insecure common rail fence, by a substance durable, cheap, and found, with very few exceptions, every where, where a fence or a house may be wanted. This substance is *earth* neither too clayey or too sandy, beaten down by a rammer between two planks till it is of a sufficient degree of hardness, which it very readily acquires. This mode of construction is called *Pisé*. There is not, perhaps, in the world, a place more favourably circumstanced for this kind of work than our town of Columbia. The red earth which is found here every where after digging a foot, or even less, is the best possible for it. Any kind of earth, however, will do, so that it be not a pure clay or a pure sand, and that it contains no vegetable or other putrescent substance. The usual test for it, is to take a handful and press it, and if it sticks together retaining the impression of the fingers, it is good. It is better to have much more sand than clay; for clay renders it liable to crack in drying. It may be full of gravel, pebbles, or small fragments of stone. It requires no addition of any thing, even water, nor any other preparation than the digging of it, and the carrying it where

wanted. I beg, gentlemen, you will not mistake this Pisé with what is called "mud houses or walls." No, it is very different and very superior, yielding only in strength and durability to the very best work of stone or brick, done with the best skill and the best lime-mortar.

This mode of building is not a new, untried thing, the practicability and benefits of which may be fermenting in the brains of some visionary man. No, it has been transmitted from generation to generation, from the time of the Romans, into the principal parts of the southern provinces of France, and also in Spain; from which last country it has been transported and rendered most extensively useful in South-America. It is the subject of a very full article, in a work of great authority, the "*Cours Complet d'Agriculture*," by the Abbé Rosier, assisted by some of the most scientific men in Europe. I have seen, in the vicinity of Lyons, houses and churches which are said to be between two and three hundred years old, which had been constructed of Pisé. Indeed, many of the richest inhabitants of that city have their country-houses, palaces we might almost call them, erected with Pisé. You can also, any of you, gentlemen, have an ocular demonstration of the practicability of the thing, by riding with me to my place in our sand-hills, where I put up very hastily and unskilfully about four years ago, a small building, sufficient, however, toshow the capabilities of this mode of building.

I do not propose that the principal edifice for the accommodation of the society be constructed in Pisé work; for, although I believe that it is capable of forming structures equal in beauty and durability with the materials usually used here, we have not yet workmen sufficiently skilful and experienced for such a purpose. I only intend to recommend the erection of out-buildings and walls of enclosure for the present. These being erected in a conspicuous place, such as you will undoubtedly select, will be models for imitation from which the public will derive incalculable benefits.

Such are the facilities offered by this mode of construction, for fencing-walls, in Columbia, for instance, that the materials can be taken from the street to make an inclosure about six feet high, and thereby improve the street by giving it the usual form of being raised in the middle, forming drains on each side for the flowing off

of rain water, &c. This thing must necessarily be economical and cheap; for the materials are usually found on the spot, requiring no hauling, and so easily executed that common labourers, under the superintendance of a tolerably intelligent man, are equal to it. The only expense attached to it is a thick wash of sand and lime put on the wall with a broom, (and my experience shows that this operation may be delayed for years without injury) and a coping of suitable materials. Stone is, of course, the best, tiles and brick next, and wood. Poor people use turf, others straw, cut of a proper length, laid across the wall on the top, and kept down by earth. This has the double disadvantage of not looking so well and of requiring to be renewed every five or six years; although this is sometimes neglected for ten or twenty years, with no improvement in beauty, certainly; but without as great a change as could be expected from such culpable neglect. I have read an account of a wall several miles in length, in South-America, which had been without a coping for more than sixty years, and yet it was standing and available. A wall of this kind carefully constructed, rusticated with the lime and sand wash, with a coping of durable materials, will stand pretty nearly as long as the earth on which it is erected, and of which it is really a part. As it has been used without any admixture, it must necessarily be incorruptible.

The question of the cost of such a work is worthy of inquiry; but it cannot be as expensive as a tolerably good looking wooden fence, which will not last twenty years, after having been continually repaired for the last half of that time.

Six workmen (negroes) is the best number for a set to work together, (and several sets may be under the same superintendant) can construct in one day three square toises of Pisé, that is, a wall six feet high and eighteen feet long; seventy-five cents per day, as the cost of each hand, is a very full allowance, as some of them, the carriers, may be inferior. This makes the expense of such a wall, independent of the wash and coping, $4.50 per day. This requires then about ninety-two such day's work to inclose a square of four acres, which make $414, which is less than a good post and plank fence can be erected for. The cost, as specified here, is in reality

much more than it would be in most cases; for this is reckoned at the price it would cost by paying the hire of the hands: whereas such work would be usually done by the plantation hands. If it be, however, desired to make a comparison between a fence of this kind and one of any other sort, the labour of the hands must be valued at the same price for the common worm, or post and rail fence, not forgetting the hauling; but, for any timber fence of a superior grade, the cost should be estimated by the price of carpenter's work, besides the cost of materials.

For a house, the foundation should be laid in stone or brick, in order chiefly to interccpt the moisture arising by capillary attraction or otherwise, which might injure the building. The structure, in Pisé, commences then about one foot above the surface of the ground, and may be continued as high as with brick, with perfect safety, and the materials for it are taken on the very spot by digging a cellar. If the house is a mere out-building, such as a kitchen, stable, servant's house, &c., it is usually rusticated, as was said of the wall; but, if intended for a large and handsome house, it is rough cast, and any ornament may then be added to it. The pounding of the earth to form these walls, &c. so incorporates the whole into one mass, that, if the work has been well done, it may be said that the building is of one solid piece, and is undoubtedly more strong, firm and permanent than a brick house, unless the bricks are of a very good quality, and very carefully laid in the best lime-mortar.

There is much land of great value in the neighbourhood of towns, the culture of which is sometimes abandoned on account of the scarcity of timber and its short duration, which renders fencing in such situations very expensive. All such might be inclosed with a Pisé wall at a comparatively small cost, and would make it worth while to make in the soil of such inclosed land, such improvement as would render it of permanent fertility, for which a large town always furnishes abundant materials.

The above is respectfully presented to the Society, with the desire that the subject may be treated with the attention which it deserves, and with the assurance that the writer is perfectly satisfied of the great and incalcu-

lable benefits that must necessarily arise from the adoption of this mode of constructing houses and fencing, wherever it is practicable, and that it is so, probably, in a majority of places.

I neglected to observe in the proper place, that the amount of work estimated as the usual day's work of a set of six hands, is for the building of houses, the walls of which are usually nearly double the thickness necessary for a fence, and that, therefore, such a set of hands can most probably make a great deal more of the very plain work required for a comparatively thin wall. I leave, however, this estimate as it is, so as to have it at the highest cost possible or probable.

Respectfully submitted by

N. HERBEMONT,

Chairman of the Committee on Rural Subjects.

Culture of Indian Corn.

"Athens, (Ga.) Sept. 21, 1835.

To the Editor of the Southern Agriculturist.

Sir,—By experiment, I have arrived at some conclusions in reference to the culture of Indian corn, which I think are of importance to planters in the Southern States, I communicate them for the use of the public with great hesitation, because they are directly at variance with the received opinions on the subject.

The early part of my life was spent in agricultural pursuits, and hence, if there were no other reason, I feel a deep interest in every thing relating to agriculture. I noticed very early the great difficulty in transplanting successfully the young corn plant. Whence came this, but from breaking the roots in taking the plant up? How is it then, that intelligent planters affirm the doctrine, that one chief object of ploughing corn is to cut its roots. If breaking the roots of young corn in transplanting it, is nearly fatal to its future growth, must not breaking its roots with the plough, when it is older, and the season hotter, be a serious injury to it? Any other conclusion seems to me to be at variance with the general economy of nature. It seems to me that there can be, in truth, but two reasons for ploughing or hoeing corn:—1st, to destroy grass and weeds:—and 2d, to keep the soil loose that the roots may easily penetrate it, in search of their

proper food. But in accomplishing these two purposes, a great injury must be done to the corn by breaking its roots. Can we not accomplish both these ends, and, at the same time keep clear of the attendant mischief? I think we can.

Last spring I planted a small piece of poor land, first breaking it up well. The rows were about three feet apart, and the stalks left from 12 to 18 inches in the drill. The ground had been very foul the last year with crab-grass, the seed of which matured. The corn was not well up this spring before the grass began to appear. When the corn had about four or five blades, the young grass completely covered the ground, and the corn was turning yellow. I spread a small quantity of stable manure round the corn, and covered the whole ground three or four inches deep with decaying leaves from the forest, taking care to do this when the ground was wet, and the leaves also, that they might not be blown away; and to leave the tops of the corn uncovered. In *ten* days there was not a particle of *living grass* to be found; and the corn had put on that deep bluish green which always betokens a healthful condition of the plant.

From the day the corn was planted until it was ripe, there was nothing more done with it: and the result is a product at the rate of *forty-two* bushels to the acre: about one-third of the stalks having two ears on each of them.

I noted, in the course of the summer, the following facts:

1st. The corn treated thus was always ahead of that planted alongside of it, and treated in the usual way.

2d. It ripened at least ten days sooner than other corn planted at the same time.

3d. During the hottest days in summer, the blades did not shrivel, as did other corn.

4th. In the driest weather, on removing the leaves, the ground was found to be moist to the surface, and loose as deep as it had been at first broken up.

5th. The hardest rains had scarcely any effect in washing away the soil, or making it hard.

It will, I think, require less labour to produce corn in this way, than in the usual mode. And even, if it required more, we have the consolation that while, by the old mode, every hour's work is an injury to the land, by this mode, every hour's work is making the land better;

for few things can be better manure than the coating of leaves put on in summer, ploughed in during the winter following.

I used leaves raked up in the forest, because of these there is an ample supply within the reach of almost every one, and because there seems to be, from my observation, a strong antipathy between dead and decaying leaves, and crab-grass, that most harrasing foe of planters.

I make this communication, as I have already said, with great hesitation, because the idea of raising corn without work, that is without ploughing and hoeing it—and, *at the same time* improving the land, by protecting it against the scorching influence of the sun and washing rains, and manuring it, is so directly in opposition to the universal practice and belief for ages. The thing is at least worthy of further trial. It *may* lead to most important results. Those who think the idea is worth any attention, may easily make an experiment on an acre or two, and note carefully its progress through the summer. If they are satisfied, after the trial, that there is any thing in it, to extend the operation will be an easy matter. If, on experiment, it should be found advisable to do so, the proper way would be, to collect the leaves in winter, and deposit them in heaps on the ground on which they are to be used, and the next spring, during a wet season, after the corn is up, spread them, taking care to leave the tops of the young corn uncovered.

Very respectfully,

JAMES CAMAK.

On Reclaiming Worn-out Lands; and the Management of a Crop on the same, by way of experiment.

Woodland, (Ala.) August 12, 1835.

To the Editor of the Southern Agriculturist.

Sir,—I was much gratified by reading in the last number received, say for July, a communication on the subject of *recovering worn-out lands*; or lands, that have unfortunately *fallen* beneath the strokes of the Goths and Vandals of agriculture; for really, Sir, no such lands as "worn-out lands" ought to be found at this day. I sin-

cerely wish, that such valuable correspondents as Mr. Pinckney, whose communication I read with much pleasure and profit, would give something on that subject, especially, for every number of your valuable work, and also, on another nearly related to it, viz. to prevent the deterioration or destruction of lands, that, fortunately for the holders and the country, are not yet reduced to a *caput mortuum.*

Some years ago I found myself in possession of some worn-out pine and oak lands, with an excellent foundation, and more than my means allowed me to recover, by the method, I believe, from experience and reason, the most promising and correct one within our reach, and for one perfect reason, with many others, because it is the lasting and effectual mode, viz. *lime and manure.* To this reason, for this article of my belief, I will here add another, because a complete recovery, by the agency of these two items, secures another great benefit, a complete and profitable rotation of crops. Having, however, some fine laying land, more than opportunity would allow me to take the course with, that I wanted to take, I determined to try the effect on such lands, of a "Rotation of Crops," in the course of which I would endeavour to gain two or three objects, to return to the earth the most possible of vegetable matter, and to my pocket all that I could. Having been successful throughout a full rotation on this land, and the rotation now gone through, I will, with the hope of doing some good to others, take the light from under the bushel.

The field contained about ten acres. On the beginning of January, 1831, I renewed the fence around it, so that nothing could get into it. About the 10th of September following, ploughed in well the crop of grass and weeds, and on the furrow sowed rye, the largest white, and of which I had an excellent growth, giving a good full pasture, until December, for calves and pigs, and occasionally until March, when every thing was removed. The rye was cut about the 1st of July, leaving a high stubble, and just before it was perfectly ripe. Hogs turned in a few days, and the day after the full moon in July, turned out, and the black and red tory-pea sown on the stubble, which had been previously well turned under, the peas harrowed in with a short wooden-tooth harrow, going with the furrow. Nothing can exceed this mode of rais-

ing the pea. It will no doubt be recollected, that grass well turned under after the full moon in July, and peas sown, the future return of grass is almost destroyed, by the peas having so much start, especially if sown thick.

My pea crop was fine. I now purchased up lean hogs, not having had time to raise them, and put on the peas as soon as ripe, permitting them to run during the night only, scattering every evening through the field, so as to have it regular, or rather laying in small heaps, a small quantity of cotton seed, in which the vegetating principle was destroyed, as it came from the gin; the allowance was about one gallon to the hog full grown, say two years old. In addition, from a patch adjoining of early turnips, I threw to the hogs, regularly over the field, about five each. During the day the hogs were permitted to run into a crab-grass pasture and an old peach orchard. These hogs, by adding about one bushel of corn each, I made excellent pork, and sold at five dollars and fifty cents per hundred—cost three dollars each on foot—average weight on selling 165 weight of pork. The dung they deposited was astonishing, and all knows of the best quality. The mass of pea-vines was prodigious. On removing the hogs, the ground was ploughed well and the vines, &c. well turned under, and oats sown in February, and well harrowed in, going with the furrow, so as not to disturb the vegetable matter deposited. The oats were superior, cut in July following, hogs turned in a few days, and the stubble, as before, turned well in and peas again sown. These, as before, fed off, and in February following the surface well turned under, and cotton planted, which gave eight hundred to the acre. It was,however, Petit Gulph seed—no rot. Just before the time for planting corn, last March, the cotton stalks were well beat down with sticks made for that purpose, so formed, as at each blow to mash the stalks, &c. well. The corn was planted last April about the 1st, five feet by three, two stalks suffered to remain, three grains dropped into the hill, the two best, on thinning, let stand; peas drilled about the full moon in July. The corn will certainly exceed thirty-five bushels to the acre; the season has been fine. The peas are good. The whole colour of the soil has changed. From a reddish, it has now assumed the dark brown colour. The first crop, say the rye crop, had about sixty or seventy bushels of lime, per

acre, given to it. The next crop will be rye, with the same quantity of lime; originally the land could not have produced ten bushels of corn per acre. The lime was burnt in the field, by cutting down the old trees out of the way, and piling with the limestone rock, picked up adjacent, and laid on as the pile was made. The rye never failed to tell where the lime was missing, and every other plant after, throughout the whole rotation. The rye gave about twelve bushels per acre. I allowed three full grown hogs, per acre, to the peas; the oats were superior, and the peas following, turned off in the manner before-mentioned, three full grown hogs per acre.

A "selection" in your last number, under the head of "corn stalk fodder," gives my mode of saving my corn crop, and which adds prodigiously to the chance of a pea crop, when the last is planted among the corn. Where this system of improvement, viz. by rotation of crops and returning to the soil, is depended on, the peas ought to be fed off, as mine will be, as before, with fattening hogs.

CINCINNATUS.

Remarks on Leaden Pipes as Water Conduits.

To the Editor of the Southern Agriculturist.

Mr. Editor,—The communication of "*Juvenis*," in your last number, (p. 517) concerning "Ewbank's tinned lead pipes," seems to relate more to the manner in which they are manufactured, than to the objection which has been made to the use of them as water conduits; indeed, the tining of leaden pipes in the manner described, seems to refer more to the preservation of the pipes themselves from decay, than to any virtue they possess n removing the danger attendant upon their use.

The objection made by "*Conductor*," in the July number of your work, (p. 345) to use the leaden pipes as water conduits, was the deleterious effect that had manifeted itself by the use of them, on the plantation of the Messrs. Fabers, on Pon Pon river. The effect, no doubt, arose from the white oxide of lead having been formed in the pipe, and with the water taken into the stomach of those who used it. How the invention of Mr. Ewbank, which is to coat the exterior of the pipe with tin, is to obviate this we cannot discern. Were he also to coat the inte-

rior surface of the pipe with tin, it would be only changing one poison for another, as in this case, we should have to encounter the white oxide of tin instead of that of lead, and it is well known that no oxide, that of iron excepted, can be taken in the stomach with safety.

It would appear, however, that no evil would result, were these pipes made of an alloy of tin and lead, as from experiments made by Mr. Proust, who was employed by the Spanish government to examine the subject, he found that copper vessels coated with this alloy, nearly totally resisted the action of vinegar and lemon juice, although exposed to it a very considerable length of time, the presence of the tin completely defending the lead from those acids, it is therefore evident, if this defence can be obtained against such powerful chymical agents, which are known to act with a most destructive energy upon those metals separately, water can have no influence as an oxidating agent upon them combined. Indeed, water has no action upon them in a separate state, unless they are in contact with atmospheric air. Take, for instance, a bright tin or leaden vessel, let it be partially filled with water after remaining some time, that portion of the vessel covered with the water will be bright, whilst that above will become tarnished, being slightly oxidized from the action of air and moisture, and the side of the vessel in contact with the edges of the surface of the water, will be covered with a white powder, which is an oxide of tin or lead, as the case may be, this oxide mixing with the water in which it is very soluble, imparts to it a deleterious quality dangerous to the stomach.

This fact will at once explain why the use of leaden pipes as water conduits, under certain circumstances, is dangerous. Water passing constantly through these pipes, cannot be impregnated with any oxide of the metal, because none can be formed by water in the absence of atmospheric air; and hence, when the water ceases to flow through them if means could be devised by which they would always remain full, no deleterious effects could possibly arise. The reason, therefore, that leaden pipes, unless used with care and caution are dangerous is this, that when the water is drawn through them by a pump when it ceases to flow, unless the valves of the pump are so completely tight, as to prevent the pressure of the air from enabling the water to recede, it will flow backwards,

leaving the whole of the pipe, that is perpendicular, entirely empty, and that which is horizontal, partially so; the interior surface of the pipe that is perpendicular, will have some portion of white oxide formed in it, but a much larger portion will be formed on the upper part of the interior, of that which lies horizontally, in consequence of the presence of some portions of water lying in the lower part. In this state of things, when the pump is set to work, the first portions of water in passing through the pipe will dissolve this oxide, and convey it into the vessel receiving the water, which if used by any animal, will produce the effect we hear so often described.

It becomes those, therefore, who use leaden pipes in conducting water for domestic purposes, to draw a large quantity through them, so as thoroughly to cleanse them, and be assured that that which they collect for use, has not been standing in the pipe.

GALENA.

Virginia Farmer's Register, No. 6, 1835.

THE Editor produces in this number a speculation of his own upon the origin of Prairies. At first blush it looked like spurring his hobby "calcareous soils" to an extreme, but examination proved it less unreasonable.

He thinks that some original tendency in the soil, induces the production of grass in preference to timber. That this preference is occasioned chiefly by an excess of calcareous earth, and by want of drainage. From whichever cause it proceeds, a luxuriant growth of grass is found to take the place of trees: and in the season of drought, fire adds its agency to extend the empire of grassy plains.

Now there is in the lower part of South-Carolina, a tract of vacant limestone which crops out from place to place; and wherever it approaches near the surface, upon the level land, especially if ill drained, the timber grows in scattered clumps, with grassy spots intervening, where the limestone dips to a greater depth, and the land lies in well drained ridges, the timber increases in size, and the forest stands in closed ranks.

There is an extensive body of country between Lenud's ferry on the Santee, and Georgetown, almost denuded of its timber by the combined action, of the several

causes mentioned in the Register. We remember when very young, to have been questioned, during a long ride through the pine woods in another part of the country, by Dr. Macbride, whose attention to Natural History gave him reputation; what peculiarity we could discover in the forest about us? To us they seemed pine trees alone: his rejoinder brought to our attention, that the trees were only short-leaved pines, and we learned from him then the fact, afterwards verified elsewhere, that the long leaved pine refused to grow over limestone. Indeed, he had a map of the limestone region on the south side of the Santee, near Nelson's ferry, constructed on that rule.

The next original paper in this number, is an account of an experiment by James M. Garnett, shewing the great superiority of wheat drilled over wheat broadcast. Then there is an ingenious article from a hand we recognize, upon the growth of mixed crops in Alabama, such as corn, rice, peas and potatoes, upon the same land. On a small scale and with the exactness of farming management, we believe "*Agricola*" right, but it disturbs the order of an extensive plantation. *Agricola's* next notion is clearly impracticable here, in our moist climate we should cure neither blades nor corn by cutting down and stacking stalks and all. The other papers in the *Register* from Alabama, shew that if she be the "daughter" of Carolina, she is likely to excel her mother in skilful farming.—*Ed. So. Agr.*

On Cotton.

Charleston, October 6, 1835.

To the Editor of the Southern Agriculturist.

Dear Sir,—If the space allotted to "Selections" in your journal be not already filled, you will confer a favour by inserting the accompanying *excerpt* from the second volume of Edwards' West-Indies, which I found transcribed into the Common Place Book of a deceased relative, dated 1804.

Its perusal will not only demonstrate the great pecuniary advantage which the Dutch, French, and British West-India Islands, as far back as 1785, derived from the *scientific cultivation of Cotton;* but will show further, that the present important practice pursued by our eminent planters of "*selecting their seed*," has already been adopt-

ed by other agriculturists also; who, no doubt, like themselves, realized the benefit of the *profitable sort* for general cultivation.

The origin of the foot gin will command attention, and a knowledge of the fact too, that until 1780, England *had no fine cotton manufactories*, whilst it is notorious that at the present day, scarcely *any of the finer articles are manufactured without cotton.* But I will not extend my observations further, trusting that your approval of the entire piece, will furnish the general reader with matter more valuable and interesting.

Very respectfully, your obedient servant,

S. R. S.

COTTON.

That beautiful vegetable wool, or substance called cotton, is the spontaneous production of three parts of the earth. It is found growing naturally in all the tropical regions of Asia, Africa and America, and may justly be comprehended among the most valuable gifts of a bountiful Creator, superintending and providing for the necessities of man.

The cotton wool which is manufactured into cloth, (for there is a species in the West-Indies, called silk or wild cotton, unfit for the loom) consist of two distinct kinds, known to the planters by the name of green seed cotton and shrub cotton; and these again have subordinate marks of difference, with which the cultivator ought to be well acquainted, if he means to apply his labours to the greatest advantage.

Green seed cotton is of two species; in one of which the wool is so firmly attached to the seed, that no method has hitherto been found of separating them, except by the hand; an operation so tedious and troublesome, that the value of the commodity is not equal to the pains that are requisite in preparing it for market. This sort, therefore, is at present cultivated principally for supplying wick for lamps that are used in sugar boiling, and for domestic purposes; but the staple being exceedingly good, and its colour perfectly white, it would doubtless be a valuable acquisition to the muslin manufactory, could means be found of detaching it easily from the seed. The other sort has larger seeds, of a duller green than the former, and the wool is not of equal fineness; though much finer than the cotton-wool in general cultivation; and it is easily separated from the seed by the common method hereafter to be described. I have been told that this species of the green seed cotton is not sufficiently known to the planters in general, (being usually confounded with the former) or that probably it would be in high estimation. Both the species above mentioned, though they produce pods at an early stage when they are mere shrubs, will, if suffered to spread, grow into trees of considerable magnitude, and yield annual crops, according to the season, without any kind of cultivation. The blossoms put forth in succession from October to January, and the pods begin to open fit for gathering from February to June.

I come now to the shrub cotton, properly so called; the shrub itself very near resembles an European Corrinth bush, and may be subdivided into several varieties, all of which, however, very near resemble each other; these varieties are:—

1st. *The Common Jamaica.*—The seeds of which are oblong, perfectly smooth, and have no beard at the smaller end—the staple is coarse but strong. Its greatest defect is, that the seeds are so brittle it is scarce possible to render it perfectly clean, on which account it is the lowest priced cotton at the British market. Such, however, is the obstinacy of habit that few of the British cotton planters give themselves the trouble to select, or seem, indeed, to wish for a better sort.

2d. *Brown Bearded.*—This is generally cultivated with the species last mentioned, but the staple is somewhat finer, and the pods, though fewer in number, produce a greater quantity of wool; the shrub gives likewise a better ratoon; it is, therefore, the interest of the cotton planter to cultivate it separately. The only disadvantage attending it, is, that it is not so easily detached from the seed as the other, and therefore, a negro will clean a few pounds less in his day's work.

3d. *Nankeen.*—This differs but little in the seeds, or otherwise, from the species last mentioned, except in the colour of the wool, which is that of the cloth called nankeen; it is not so much in demand as the white.

4th. *French or Small Seed*—With a whitish beard; this is the cotton in general cultivation in Hispaniola. Its staple is finer, and its produce equal to either of the three species last mentioned, as the shrub is supposed to bear a greater number of pods, than the Jamaica or the brown bearded, but is less hardy than either.

5th. *Kidney Cotton*, so called, from the seed being conglomerated, or adhering firmly to each other in the pod. In all the other sorts they are separated. It is likewise called chain cotton, and I believe is the true cotton of Brazil. The staple is good, the pod large, and the produce considerable. A single negro may clean with ease sixty-five pounds in a day, besides which it leaves the seeds behind unbroken, and comes perfectly clean from the rollers. It is, therefore, improvident in the highest degree, to mix this species with any other. On the whole, the most profitable sorts for general cultivation seem to be, the second or the green seed, the French or small seed, and the Brazilian; the mode of culture is the same with all the different species, and there is this advantage attending them all, that they will flourish in the driest and most rocky soils, provided such lands have not been exhausted by former cultivation. Dryness, both in respect of the soil and atmosphere, is, indeed, essentially necessary in all its stages, for if the land is moist, the plant expands itself in branches and leaves, and if the rains are heavy either when the plant is in blossom, or when the pods are beginning to unfold, the crop is lost; perhaps, however, these observations apply more immediately to the French cotton than any other.

The plant is raised from the seed, the land requiring no other preparation than to be cleared of its native incumbrances: and the season for putting the seed into the ground, is from May to September, both months inclusive. This is usually done in ranks or rows, leaving a space between each of six or eight feet, the holes in each row being commonly four feet apart.

It is the practice to put eight or ten of the seeds into each hole, because some of them are commonly devoured by a grub, or worm, and

others rot in the ground; the young sprouts make their appearance in about a fortnight, but they are of slow growth for the first six weeks, at which period it is necessary to clean the ground, and draw the supernumerary plants, leaving two or three only of the strongest in each hole; one plant alone would be sufficient to leave, if there was any certainty of its coming to maturity, but many of the tender sprouts are devoured by the grub. At the age of three or four months, the plants are cleaned a second time, and both the stem and branches pruned, or as it is called, topped; an inch (or more, if the plants are luxuriant) being broken off from the end of each shoot; which is done in order to make the stems throw out a greater number of lateral branches; [and also to prevent the cotton, from its height, being whipped by the high winds—S.] this operation, if the growth be over luxuriant, is sometimes performed a second and even a third time. At the end of five months, the plant begins to blossom and put forth its beautiful yellow flowers, and in two months more the pod is formed, from the seventh to the tenth month the pods ripen in succession; when they burst open in three partitions displaying their white and glossy down to the sight. The wool is now gathered, the seeds being enveloped in it, from which it is afterwards extricated by a machine, resembling a turner's lathe. It is called a *gin*, and is composed of two small rollers placed close and parallel to each other in a frame, and turned in opposite directions by different wheels, which are moved by the foot. The cotton being put by the hand to these rollers as they move round, readily passes between them, leaving the seeds, which are two large for the interspace behind.

The wool is afterwards hand picked that it may be properly cleaned of decayed leaves, broken seeds, and wool which has been stained and damaged in the pod. It is then packed into bags of about 200lbs. weight, and sent to market [in Carolina from 250 to 350 weight.—S.]

The finest grained and most perfectly clean cotton which is brought to the English market, is, I believe, that of the Dutch plantations of Berbice, Demarara, and Surinam, and of the Islands of Cayenne, but before the year 1780, England had no fine manufactories. In the latter end of that year, however, cotton-wool of all kinds found a ready sale at the following prices.

	s.	*d.*	
Berbice, - - - - -	2	1	per lb.
Demarara, - - - - -	1	11 to 2	s1
Surinam, - - - - -	2	0	
Cayenne, - - - - -	2	0	
St. Domingo, - - - -	1	10	
Tobago, - - - - -	1	9	
Jamaica, - - - - -	1	7	

Since that time the prices have indeed varied, but the relative value has continued nearly the same; that is the difference of price between the cotton of Berbice and that of Jamaica, has been from 25 to 30 per cent. in favour of the former: a circumstance which alone should convince the bigoted planter of the British West-Indies that, if he wishes to turn his labours to account the choice of a better species of cotton, at least, of a sort more easily cleaned than that in general cultivation, is indispensably requisite.

I shall now bring into one point of view, the several particulars attending the first cost and settlement of a plantation in this sort of husbandry, and the returns, which may be reasonably expected, from

a small capital thus employed. I fix on a small capital, because I conceive that a cotton plantation may be established on a more moderate fund than any other; and it is for the interest of the community that men of small fortunes should be instructed how to employ their time and labours to the best advantage. Since it is to such men chiefly, that the West-Indies are to look for safety in the hour of danger.

It is presumed that land proper for the growth of cotton situated near the sea, may be purchased in many parts of the West-Indies, (Jamaica especially) at £5, Jamaica currency, per acre, and as it is prudent in most cases to change the soil after the third crop, by replanting fresh land, I will allot fifty acres for the first purchase, in order that the planter may have room for that purpose. Supposing, therefore, that one-half only is planted in cotton, at the same time the capital will be invested as follows:—

	£.	s.	d.
Cost of 50 acres of land, at £5 cur. per acre,	250	0	0
Expense of cleaning, fencing, and planting 25 acres, at £7 per acre,	175	0	0
Purchase of 12 negroes, at £70 each,	840	0	0
	£1265	0	0
One year's interest at 6 per cent.	75	18	0
One year's maintainance, clothing and medical care,	120	0	0
Total expenditure in Jamaica currency, equal to £1,040 sterling,	1460	18	0

The returns are now to be considered: in Jamaica, it is commonly reckoned that one acre of cotton will yield annually 150lbs. weight, and in some year's, nearly twice as much: but I am afraid that on an average, of any considerable number of successive crops, even the former is too great an allowance. By accounts which I have procured from the Bahama Islands, it appears that in 1785, '86 and 87, (all which years were considered as favourable) the produce of the cotton lands, on an average, did not exceed one hundred and twelve pounds per acre, viz:—

In 1785,	2476	2480	
1786,	3050 acres produced	3000	Cwt. cotton.
1787,	4500	4380	

The price in the Bahamas and Jamaica was the same, viz. "1*s*.3*d*. sterling per pound, allowing, therefore, the average produce per acre to be 100 weight. The returns are these, viz."

25 cwt. at 1*s*.3*d*. sterling per pound,	£175
Deduct incidental expenses, as materials for bagging, colonial taxes, &c.	25
Sterling money, ren.	£150

Which gives an interest of upwards of 14 per cent. on the capital, arising too from the lowest priced cotton; if the same calculation be applied to cotton wool of 2*s*. per pound value, (the present price of the cotton-wool of St. Domingo) the profit on the capital is 24 per cent. From this display the rapid progress which the Dutch and French planters have made in the culture of this commodity, cannot

be thought extraordinary; but there remains some circumstances of a less favourable nature to be taken into the account—of all the productions to which labour is applied, the cotton plant is, perhaps, the most precarious. In its first stage, it is attacked by the grub: it is devoured by caterpillers in the second—it is sometimes withered by the blast; and rains frequently destroy it both in the blossom and the pod. The Bahama Islands afforded a melancholy instance of the uncertainty of this production in 1788. No less than 280 tons, on a moderate estimate, having been devoured by the worm between September and March, in that year. After this, the reader will hardly suspect me of having rated the average produce of this plant for a series of years too low. With every disadvantage, however, the demand for cotton-wool for the British manufactories increases with such rapidity, that it cannot be doubted, the cultivation of it with the cautions recommended, will be found highly profitable; the British dominions not supplying at the present more than one-sixth part of the home demand. If after a careful selection and trials of the different species of the seeds already in our possession, the cotton-wool of the British West-Indies, shall still be found inferior to that of the Dutch, no difficulty can occur in obtaining from them a better sort; it is evident that the French cotton loses its superiority in our islands, by being sown promiscuously with an inferior species.

I shall conclude the subject with presenting to my readers the following tables drawn from authentic sources; which cannot fail to furnish abundant encouragement for speculation and adventure:

An account of foreign cotton-wool imported into the British West-Indies in British ships.

Years.	lbs.
1784,	1,135,750
1785,	1,398,500
1786,	1,346,386
1787,	1,158,000

An account of foreign cotton-wool imported into the British West-Indies under the free-port act.

Years.	lbs.
1784,	2,169,000
1785,	1,573,280
1786,	1,962,500
1787,	1.943,000

An account of cotton-wool, British and foreign, imported from the British West-Indies into Great-Britain.

Years.	lbs.
1784,	6,893,959
1785,	8,204,611
1786,	7,830,734
1787,	9,396,921

An account of cotton-wool imported into Great-Britain from all parts.

Years.	lbs.	Supposed value in Manufactures.
1784,	11,280,338	£3,950,000
1785,	17,992,888	6,000,000
1786,	19,151,867	6,500,000
1787,	23,600,000	7,500,000

The water-mills work 286,000 spindles, and the jennies 1,665,100, total of spindles, 1,951,100; and it has been asserted that a pound of raw cotton-wool from Demerara, has been spun into 356 hanks, each hank being 840 yards; so that the thread would have extended 169 miles. On the whole, it is computed that not less than 600,000 people in Great-Britain, find full employment in the cotton manufactory.

In point of importance, therefore, even the produce and manufactures of the great staple commodity of this kingdom, wool does exceed it in a two-fold proportion. According to the information of a very able and diligent inquirer, there are from ten to twelve millions of sheep in England, the value of their wool may one year with another amount to £3,000,000; the expense of manufacturing this is probably £9,000,000. and the total value £12,000,000. In reference to the number of persons who are maintained by this manufacture, there are, probably, about a million."

Note.—Since the introduction of the culture of cotton in the southern section of the United States, the growth and wealth of the nation are unparalelled in the annals of history. Previous to this period, a few of the Southern States exported in comparison to what they now do in the single article of cotton, a trifling amount in rice, indigo and tobacco, employed but little shipping, and depended upon foreign nations for almost all their necessaries and comforts of life. Since then, the wonderful improvements in machinery, and in the manufacture of cotton, have made it available for almost any use that wool and flax can be applied to, and hence, the immense consumption of this article all over the world for clothing, which seems to keep pace with its growth, and bids fair to increase the wealth of our country to an incalculable degree. Messrs. Gregg & Sons own the largest establishment in Great-Britain. manufacture annually 3,120,000lbs. of cotton; a deviation of one penny per lb. in the price of cotton, makes a difference to them of £3,000 per annum. In the establishment of T. Ashton, at Hyde, there are 4,000 power looms, and he expends weekly in wages £4,000. This selection of only two instances, will give some idea of the immense extent of Cotton Manufactories in England.

The following Table shows the increase of growth, &c. to be progressive;

Cotton Crop of the United States.—The growth for the year ending 30th September, 1835.

	this year.	last year.
New-Orleans, - -	511146	454719
Florida, - - - -	52085	36738
Alabama, - - -	197692	149978
Georgia, - - -	222670	258655
South-Carolina, -	203166	227359
North-Carolina, -	34399	33220
Virginia, - - - -	33170	44725
Total crop of U. S.	1,254,328	1,205,394
Increase,	48934	

Growth of each year.	
For 1824–5 - - - - -	560,000 bales.
1825–6 - - - - -	710,000
1826–7 - - - - -	937,000
1827–8 - - - - -	712,000
1828–9 - - - - -	857,774
1829–30 - - - - -	976,845
1830–31 - - - - -	1,038,848
1831–32 - - - - -	987,477
1832–33 - - - - -	1,070,438
1833–34 - - - - -	1,205,394
1834–35 - - - - -	1,254,328

Estimated quantity manufactured in the United States for 1834–5, 216,888 bales.

Ed. So. Agr.

PART II.

SELECTIONS.

Silk Culture in the United States.

[FROM THE TENNESSEE FARMER.]

[We insert with pleasure, the following communication on the subject of silk, transmitted to us by the author, and we trust, it will have the effect of stimulating our farmers to active exertions in raising the mulberry tree, and making the other preparations, necessary to a full and fair experiment for ascertaining the value of the silk culture, in which he appears to take so deep an interest.—*Ed. Ten. Far.*]

Mill's Point, Hickman County, (Ky.) Aug. 19, 1835.

Friend Emmerson,—It is with pleasure I acknowledge the receipt of your five numbers of the Tennessee Farmer.

The first article which caught my eye was an Essay on the Culture of Silk, and a letter from Judge Spencer to his friend, Samuel Hopkins. I am indeed highly delighted to observe that the culture of silk is attracting the attention of the sagacious mechanic, the talented, enterprising projector and the public spirited philosopher. I have ever admired the ingenuity and delighted in the society of the industrious insect which with so much adroitness and perseverance converts the mulberry leaf into the rich and golden cocoon. Curiosity led me three years since to visit the Shaker Village on White-water, State of Ohio, and in May I first saw the operations of this peaceful and productive little creature. Under the control and care of one of those innocent daughters of religion and love, I saw to my utter astonishment, the daily conversion of the raw material taken from the forest, into the glossy and beautiful fabric, in which queens are apparelled and princesses are robed. Notwithstanding the evidence of the profit in rearing the worm in the town of Mansfield and County of Windham, was so palpable and convincing to the world, yet we find our countrymen, notwithstanding all their passion for novelty and burning desire for gain, almost insensible to the advantages of this branch of labour, until a few years back when it began to receive an impulse from the generous efforts of our government and the exertions of a few talented and discriminating men. I recollect when a boy, of noticing some standard white mulberry trees in the garden of an amiable Doctor Hall, in Pomfret, Windham County, (Con.) he had introduced them in order to gratify the curiosity of his accomplished and interesting wife and two beautiful industrious daughters, who at that early period were directing their efforts to raise the worms, reel the

silk and convert it into sewing silk—this they accomplished. Little did I then think that this branch of industry would constitute one of the most delightful pursuits of my life and that I should live to see mechanic, speculator, planter and philosopher, all animated in giving force and success to this novel employment. The government of the United States have discharged the high and honourable duty imposed on them in printing, under the supervision and control of the Secretary of State, a treatise on the culture of the mulberry tree and the rearing of the silkworm, and afterwards distributing 30,000 copies gratis throughout the Union for the reading and benefit of our citizens. The government have explored the region of native wealth which is open to all, and it is now the interest and duty of the citizen to avail himself of the resources which nature and art offer to enrich himself and benefit his country. Ever since I was so interested in this innocent pursuit, I have been adding to my knowledge—collecting essays on these subjects—experiments made in different States by planters—by settled silk raisers—by widow's and agricultural societies. In addition to this fund of information I have devoted my time and feeble talents to the practical branches; and at this moment I sensibly feel and do say, that in no possible manner can the resources of talents, ingenuity and wealth be more profitably expended than in preparing extensive orchards and rearing up buildings for the operations and residence of this wonderful insect and never failing friend to man. Experiments from all quarters are pouring in upon us to rouse our energy into action. Inventions are multiplying to facilitate the hitherto arduous and difficult operation of reeling—machines are going up—factories are raising, and farmers and their rosy cheeked girls are parting with their scruples, and inviting the little stranger to take up their abode with them.

In a letter recently received from that active, generous and highly esteemed fellow-citizen, Nicholas Longworth, of Cincinnati, he observes—"I am entirely satisfied that the culture of silk will spread itself rapidity over our beloved land, and that the labours of cultivating the various kinds of mulberry tree, and of rearing the worm and reeling the silk will be much abridged, by the active, the energetic and intelligent faculties of citizens of the United States." How completely has one part of this prediction been verified in the late inventions of the ingenious Gay and Moseley.

When such men as Homergue, Du Ponceau, Mease, of Philadelphia, Longworth, of Cincinnati, and Gideon B. Smith, of Baltimore, appear to be active in its promotion, what can be expected but that the mighty tide will turn, and the silk interest will share largely in attention, and participate proudly in the triumphs which Americal zeal and skill will effect in our land.

In a letter received not long since from Gideon Smith, he urges it most imperatively on me, "not to neglect immediate attention to the rearing of an orchard of the *Morus Multicaulis*, as those whose foresight enable them to make favourable preparations, will unquestionably share most largely in the benefits of its introduction for food for the silk worms. Example has a force which precept has not, and experiments which have been made, and are now making in every section of the Union, will give an impetus to silk raising which will soon be amalgamatod with our other all.absorbing passions for wealth and profit.

Depend upon it, Friend Emmerson, ten years will place these interests on a level with those of cotton, rice and grain. Our countrymen possess unbounded energies—strong, nervous, almost insensible of depression; the native sons of our soil accomplish any thing within the reach of any ingenuity or intellect given by our Creator to man. There is no branch of business (throwing aside all views of profit,) carried on in society, which is attended with so many charms and so few toils and exposure as the rearing of silk-worms. Except the gathering of the leaves, every part of the process is conducted under cover from heat and rain—hence delicate females, boys and aged people can work to as much advantage as the healthy and robust. The peaceable disposition evinced by those sagacious little insects is not the least of their virtues. They seem incapable of imitation, but every one pursues his labours with an equanimity and zeal even surpassing the industrious bee. The Shakers have raised silk and manufactured it for twenty years. Their system is by no means expensive or complicated. The boys gather the leaves and the sisters conduct the worm through every stage of his life. Their manner of killing the chrysalis is three days exposure to the warm sun in June.

No body of people is so well calculated to conduct this business as Shakers. The purity and innocence of their lives—their calmness and industry—their uniform cleanliness and economy, and their insulated life, free from the turmoils and distractions of the world, fit them in an eminent manner for the prosecution of these innocent labours. It will take several years for the skill and enterprise of our countrymen to raise the balance to the hitherto enormous sum which has been expended for imported silks. The market never can be glutted —competition never can weaken the sinews of activity and ambition —but the more general the cultivation the better the market to give encouragement to manufactures.

I trust, Friend Emmerson, that you will not suffer your efforts to relax in rousing up the attention of your countrymen to their dearest interests—I mean the interest of wealth and independence in circumstances. The elevation of young convicts from depraved and prodigal steps to the benign and heavenly walks of religion, has a powerful effect in convincing mankind of error and the delusions of a wicked life, and it is just so with the reports of experimentalists and projectors in this important branch of national industry. Success with one, wins the notice of another, and thus the fire of ambition extends from region to region and soon operations assume an interesting and formidable shape, both to the advantage and honour of the adventurous silk raiser.

I have made several cursory remarks on this my favourite pursuit, now permit me, Friend Emmerson, to detail to you a few facts, within actual observation.

Mr. Daniel Rowe, an ingenious and enterprising citizen of Dayton, (Ohio,) about three years since, occupied three large rooms in the city with worms. He had never before that season paid any attention to them, or the culture of the mulberry tree. He hired a man and a boy to go to the forest, two miles from Dayton and gather leaves—two girls were employed five weeks in feeding them and preserving the cocoons. At the end of that time he gathered (if I recollect right) eight barrels of cocoons. He was indebted wholly to the woods for their food—about the same time he set out five acres of trees, some white and some red mulberry from the woods—two years after this I

received information in a letter from Nicholas Longworth, of Cincinnati, that a factory was established there (in Dayton,) and that vests and handkerchiefs were manufactured with success, and much to his honour and to the delight of the citizens. The five acres of mulberry, according to all concurrent statements, particularly according to the one made in April, 1835, by Judge Spencer, ought to yield him 1500 dollars clear gain.

We must recollect in this concern that the trees are improving every year—the same buildings and furniture will answer twenty years to come which does now. Success attends the efforts of that very amiable, talented and ambitious citizen. Another fact which I have made public in a lecture which I gave on the subject of the silk culture. Two log cabins at the Shaker village, in Ohio, and a garden-house, were appropriated as nurseries for the worms. The leaves were brought half a mile by boys, and the worms fed and cleaned by his two girls of 13 years old, superintended by a young and beautiful shakeress, somewhat acquainted with the business; in five weeks the cocoons were exposed to the sun and reeled into raw silk, and sold to Gen. Daniel Gano, of Cincinnati, I think, for $97.50—he gave the Shakers for sewing silk $10 per pound.

The committee appointed by Congress, at the instance of Mr. Van Renselaer, to report on a manual for the raising of silk in the United States, say, that from one acre planted with mulberry trees, 500lbs of raw silk can be obtained, this, at a minimum price of $5 per pound would be 2500 dollars. The more I write and think on this subject, the greater is my astonishment, that my countrymen do not take hold on the business with Herculean energy and go ahead. Create first the food, an abundance of the raw materials will be the consequence, and then the hands to manufacture will soon be found.

It deeply regards every farmer's individual interest to exert himself to secure a share in the culture of silk, of which no other crop we have, can be compared to it for richness and excellence, and in a sense of public duty to the powerful community of which we are members, the exertion ought to be great, as it would make a great addition to our resources. The cotton manufactories are dependent on the south for their raw materials; silk would be our own, and nations and individuals cannot be too careful to secure within themselves means for their prosperity and greatness. But I have digressed a little.

The Valentine Silk Company, Providence, Rhode-Island, have 30,000 trees on their farm—each tree yielding on an average, one half pound of silk, worth at least $5 per pound, making their income worth $75,000 per annum—powerful machinery is in operation to weave the material, and elegant stuffs have already been produced.

The Eaton Register says, Mrs. Alfred, of New Cum, Preble County, Ohio, has the present season, with the aid of one small girl and two boys about twelve years old, fed and attended about 50,000 silk worms, with the leaves of the common wild mulberry tree—from her labours of six weeks she realized $225, from the sale of the raw material; the raw material when put into skeins would bring $400. The silk she manufactured is equal in elegance and richness to any foreign silk; and yet this female accomplishes all her labours without the aid of theory or instruction. The report of the House of Representatives, through their committee, on the presentation of an elegant

national flag by Mr. Du Ponceau, and manufactured in Philadelphia, by Mr. Homergue, is, that "50 years ago there was scarce a pound of cotton raised in the United States, and last year there was six hundred and forty thousand bags exported to England; there is nothing unreasonable in the conjecture, that a similar developement may attend American silk."

The Dayton Journal of 1831, says, a citizen of our vicinity with two boys has attended 100,000 silkworms, which produced 300 pounds of cocoons, which sold in Cincinnati, for $125.

It is stated by the Hamilton County Agricultural Society, in their circular upon the culture of silk, that four acres of ground, planted in white mulberry trees, near Boston, have fed worms enough to produce 420 pounds of silk, worth $3.50 per pound, amounting to 1470 dollars. A single tree in France has been known to yield five dollars on the sale of its leaves.

The Cincinnati Chronicle says, Mrs. Daniel Parker, of Claremont County, has been active in introducing the mulberry tree in Miami Valley. She raised from 50,000 worms $180 worth of silk, with the assistance of her two little daughters; she is preparing to extend her operations, and devote her time and talents to this business. Mr. Gideon B. Smith, of Baltimore, says, that a boy eleven years old, employed thirty-two hours, and a woman thirty-seven hours during the last season in rearing 10,000 silkworms, and that the cocoons before reeling were worth $140. One female and one boy may with ease take charge of 10,000, by devoting forty days to them; the value of these 10,000 worms, before reeling, will be worth $140, an amount which few females can earn in a whole year.

Poulson's Advertiser says, that five tons of raw silk were raised in two towns in Connecticut this year. One gentleman last year paid $1500 for white mulberry trees, which he set out on a 100 acre lot.

The sales of sowing silk in Mansfield alone this year, amount to $85,000, says the New-England Farmer. The Cincinnati American says, Mr. James Smith, of Bladen County, North-Carolina, made 100 pounds fine sewing silk, besides the floss from 200,000 worms, which sold for $700; four or five negro children attended them under his inspection. These are a few of the countless facts respecting the productiveness of the silkworm.

No man delights more in being engaged in this business than myself, and none can wish the cause greater prosperity. If you think these remarks worthy a place in the Tennessee Farmer, you can give them an insertion.

Your sincere Friend,
NATH. G. M. SENTER.

Culture of Wheat.

[FROM THE GENESEE FARMER.]

As this is considered the most important crop to which the farmer can direct his attention, it is at the same time one of the most difficult to cultivate with uniform success. Different and even opposite courses must be pursued under different circumstances, in order to obtain the same desirable result—a good crop; difference of soil—difference of climate—difference in the time of sowing—and difference in the variety of seed, all frequently require material variations in the mode of

culture, rendering the business of raising wheat one of the most complex of all the branches of agricultural practice.

In offering a few remarks upon the cultivation of this very important crop, we propose principally to point out that course which practice has shown to be most uniformly attended with success; and we indulge the hope, that by placing, at the present time, these facts and instructions concisely before the farmer, he may not only be enabled the more effectually to put his previous knowledge into operation, but also to derive new and useful hints from the experience of others.

Soil and Preparation.—In preparing the soil for many other crops, it is rare that much caution or skill is necessary; for instance, *corn* requires high manuring and a rich soil, and it is scarcely possible to carry this to excess. But with wheat the case is otherwise; land naturally very rich, or highly manured, is apt to cause, during the hot season of summer, a too rapid growth of straw, at the expense of the seed, and rust, lodging, and ultimate failure is frequently the consequence. This evil is increased to a far greater degree if strong unfermented manure is employed, which causes a still more luxuriant growth of stalks.* Unfermented or fresh manure should, therefore,

* It is an established law in vegetable economy, that an extraordinary growth of the stem and leaves is always at the expense of the fruit or seed. Hence, fruit trees rarely bear while in a very thrifty state, but require first to be checked in their growth in order to produce fruit. Now, as it is during the heat of summer, a season when vegetation advances most rapidly, that wheat matures its seed, it is more liable, on this account, to suffer from too vigorous a growth, than other plants which ripen their seed later in the season, such as Indian corn.

Another evil of a luxuriant growth is the liability to be beaten down by storms; and this is frequently felt even where the rapidity of the growth would not be such as to prevent the maturity of the seed. But that this evil is not a necessary consequence of vigorous vegetation, is proved by the fact that some of the largest crops ever cultivated, have completely withstood wind and rains; and also by the fact that grain is not always beaten down where heaviest on the field. What course is requisite to prevent this evil, without diminishing the crop, requires further investigation.

An experiment given in the American Farmer, vol. xv. p. 265, may serve to throw some light on the subject. Two pieces of ground precisely similar in quality and aspect, were sown with wheat; one was sown broadcast, and the other in rows, in the following way:—The land was ploughed as usual, but instead of being harrowed, the wheat was sown immediately after ploughing, by which nearly all the seed fell into the furrows, very little remaining on the ridges. The field was harrowed, not crosswise, but in the same direction as it was ploughed. The last operation cast the seed almost entirely into the furrows, at the same time covering it, so that the wheat stood when it came up almost as completely in rows as if planted in drills. This field of wheat succeeded perfectly and the grain remained erect; while that on the adjoining field which had been sowed broadcast, was beaten to the ground.

This result was explained as follows: In the field sown broadcast, the grain stood close and prevented the circulation of the air; consequently the stalks, deprived of its influence, and the action of light, remained soft and tender, and unable to support their weight; but the case being different in the other field, the stalks became firm and hardened. "Plant one grain of wheat," says Nicholson, "in the richest soil, and the stalk when grown will not fall; but plant many in the same soil, so closely together as to preclude the free circulation of the air among the stalks, and they become unable to support their own weight."

never be applied to land intended immediately for wheat. But as a material loss would result from allowing manure to ferment in the open air, and thus waste a large part of its strength, it is always best, where practicable, to apply fresh manure to other crops which are to precede wheat. In this way the manure becomes well rotted and thoroughly incorporated with the soil by the time that wheat is sown upon it. Land may be highly manured by this course, without any bad effects; indeed, some of the best crops are obtained from ground enriched in this manner; instances of which may be often seen in places where large quantities of manure have been accidentally deposited in previous years, as by old stacks of hay, demolished buildings, &c., where grain is often three times more productive than on adjoining ground in the same field.

Deep Ploughing.—When the above course of manuring is pursued, land is rarely made too rich for wheat, provided it be accompanied with deep ploughing. This is indeed highly important, especially in heavy fertile soils, such as constitute a large part of the land of western New-York. Nearly all who raise large crops on such soils have made use of deep ploughing in previous years. There are, however, some very shallow soils, where the subsoil will not admit of this practice; such, of course, must form exceptions; but these form but a small part of the land in this country.

Summer Fallows and rotation of Crops.—It is a point which appears to be generally conceded, that *rest* is of no use to land and can never improve its quality while nothing grows upon it. Ground which is not employed in producing food for animals, should be occupied in preparing food for plants; or in other words, instead of lying naked, it should be producing some suitable crop to serve as a coat of manure to enrich itself. The practice of summer fallowing, therefore, can only be of use in destroying weeds with which land may have become infested, and in pulverizing and mixing soils of a heavy adhesive nature. In other cases the practice should never be resorted to. For although it generally is followed by good crops, yet these are produced at such expense, as to render it in the end much more unprofitable than a judicious rotation. For in addition to several expensive ploughings, the use of the land for nearly two years is appropriated to a single crop.

But one of the worst practices in husbandry, is that of raising successive crops of wheat on the same field. In this way land always must deteriorate, at the same time it becomes foul with chess and other weeds. In many parts of this State (New-York) where this course has been practised, fields have been seen the present season with little else than chess growing upon them. It is true, there are some farmers who have succeeded in raising a succession of good crops on one piece of ground, but such instances are comparatively very rare; and even where they exist, the practice should not be continued. For it has been proved by repeated experiments, that where the same crop is taken year after year from a piece of land, it becomes, sooner or later, exhausted of its specific food for that crop—in some instances this speedily takes place, in others it requires a long series of years, but in all cases it is the inevitable consequence. Instances of soils thus worn out are not wanting in the older settled parts of this country, which were once remarkable for their fertility, but which now afford crops scarcely worth raising. And it may be regarded as a universal rule, that lands, once capable of producing good crops, and afterwards

loosing this quality, are brought to that state by improper cultivation —by a too frequent succession of exhausting crops, instead of a constant change from one crop to another, from crops of as different nature from each other as possible, and changes from tillage to seeding with grass, and from grass again to tillage.

Peas, beans, and clover, are among the best crops to precede wheat, as they are very different in their nature from it, and consequently afford a greater change in the succession. Clover in particular, possesses several advantages; its roots loosen the soil, it furnishes excellent manure when ploughed under, and unlike the natural grasses, does not form so tough a sod as to require summer fallowing in order to break and pulverize it.

Best sorts of Seed.—In favourable seasons, and on good ground, the red chaff bald wheat is generally to be preferred as affording the largest and best product; but as the white flint is a hardier plant and more capable of withstanding the vicissitudes of seasons, there is more certainty of its producing a uniform crop; it is more especially to be preferred on wet soils, or where wheat is liable to be winter killed, or otherwise suffer from unfavourable causes. On soils of unequal nature, or where the uncertainty of the coming season renders it impossible to know what variety may be best adapted, it has sometimes been found useful to mix seed of opposite properties, such as flint and red chaff, so that where one does not succeed, the other may take its place. The crate wheat, and some other of the bearded varieties, produce good crops, but are not perhaps equal in all respects to those above mentioned.

It is not only important to obtain the best varieties, but also to use the finest and largest seed which can be procured of such varieties.

Change of Seed.—There is also a great advantage in a change of seed from different climates, and from soils of an opposite nature, if the quality be otherwise equally good. Certain varieties, if cultivated for a long succession of years on the same spot, gradually change in their nature and quality, according to the nature of the climate and soil. If this change is such as in any particular to lessen its value, the seed should be changed by substituting that which grew where such change is not produced. An instance may serve to illustrate this. "In some mountainous countries," says Professor Bronn, "in Scotland, for example, they bring the seed from the low country and from the plains, where the climate is more mild, and consequently the seed more forward, a quality which it always preserves for many generations. We are convinced that the cultivator of this mountainous district, if he always used seed from his own crops, would reap later and later harvests, so that at last, perhaps, they would not come to perfect maturity; a circumstance easily explained by the short duration of the summers in the mountains. If, on the other hand, the cultivator of a flat country, the climate of which is mild, and the soil dry and light, continually made use of his own seed, it would head every year sooner, the stalks would become shorter, and the heads and grain smaller and smaller, and in time there would result but a poor produce. In this last case, the cultivator brings his seed with advantage from a country more cold, the soil of which is good and substantial."

The quantity of seed per acre, should be from five pecks to two bushels. It should vary with the time of sowing, and with the size of the grain. Late, requires more than early sowing; and large and

full seed should be in greater quantity than that which is small, in order to compensate for the less number contained in a bushel.

To prevent winter killing.—Winter killing is caused by the heaving of the soil by frost, generally during the severe nights in the latter part of winter, after the covering of snow has melted from the ground. This breaks the roots, and the plants, as soon as the dry weather of spring comes on, wither and die from the want of nourishment and moisture. The freezing of the large quantity of water with which the ground is saturated early in spring, proves particularly destructive to wheat. Hence the great importance of thorough draining, both by surface and channels and by covered ditches. Superficial furrows should not only be cut through the field wherever they may be needed, to carry off what may fall upon it; but also at its upper sides, to prevent the water from contiguous fields from flowing upon it. Covered drains should be from two to three feet deep, and three or four rods apart, where the object is to drain off the water which *rests in the soil* on low wet land. Where underground *streams* are to be cut off, the depth, course, and distance asundar, must be suited to circumstances, which nothing but an examination on the spot can determine. The great profit of draining has been proved by some farmers in the Western part of this State, who have by a thorough course rendered low, heavy, and rich land, which formerly was wholly unfit for wheat, on account of its wetness, now capable of yielding from thirty to forty bushels to the acre; and in some cases almost repaying in a single year, the whole expense of the work.

Manuring, often on certain soils prevents wheat being winter killed. Thus poor and heavy land, where crops are liable to this injury, may be greatly improved in this respect by manure; as is proved by the fact, often witnessed, that such parts of fields as have been well manured produce abundantly, while other parts unmanured are left bare by the action of the winter frosts.

Another mode of preventing winter killing is to cover the surface of the ground with a coating of straw. When this is employed, it should be spread upon the surface after sowing and just before the wheat comes up; or else in the winter, (or when the danger is to be apprehended,) and removed again with a horse-rake as early in the spring as the weather will admit.

Sowing early in autumn has also a tendency to prevent winter killing, by affording the roots time to attain strength sufficient to resist the action of the frost. But as wheat sown early is more liable to attacks of the Hessian fly, farmers must exercise their discretion as to the time of sowing. As a general rule, where the principal loss is to be apprehended from winter killing, wheat should be sown early; but where the Hessian fly is considered the most formidable evil, sowing a few weeks later is recommended as best.

Importance of further experiments.—Notwithstanding the great improvements in agriculture, the art of cultivating this important crop may yet be considered in its its infancy. The average product of wheat throughout all parts of the world, has been estimated not to exceed six bushels reaped for one sown. But that this amount might be greatly increased none can doubt. The enormous crops which are sometimes raised in this country, teach us what may be done under favourable circumstances. Take for instance, the account of the crop raised in 1816 in Springfield, (Mass.) on *four acres* of land, the product of which was *two hundred bushels*, or fifty bushels to the

acre;* also that raised in 1833 by Jirah Blackmer, of Wheatland, Monroe county, who obtained the premium of the Agricultural Society, for a crop of *sixty-eight bushels and forty-three pounds* on a single acre. Now the great point to to be decided is to know what are the essential requisites of a good crop; and to be able to distinguish these from accidental circumstances not connected with success. It is, therefore, important that numerous experiments should be made; and above all, that every one who is successful to raising great crops of this grain, should publish a particular account of his method, describing as accurately as possible the nature of the soil, the quantity and kind of seed, the condition and preparation of the land, the mode and kind of manuring, and in short a minute description of the whole course of culture. Even a slight improvement, if generally adopted in the Genesee country alone, would be of the value of many thousand dollars annually; every new fact or suggestion should therefore receive all the attention which its importance demands.

Hints on Sheep Husbandry.

[FROM THE NEW-YORK FARMER.]

It is obvious that housing sheep at night, and providing them during the day, a shelter from the rain and sun, must preserve and improve the wool: and also essentially conduce to the health, comfort, and preservation of the animal.

I would have sheep winter fed, to the degree of commencing the grass season in good store order, and without having sustained any check, in carcass or wool; and winter sheltered in yards or sheds, as much as the sheep may themselves affect, throughout even the mildest climates of Britain, for neither merino, nor half breed merino lambs, nor indeed, those of any other breed, ought to be exposed without some kind of shelter, to the rigours of the winter and early spring; and the sheep, when arrived at their maturity or full strength, will still require the same, with regular and good feeding, if it be intended to force the the growth of their fleece, to its utmost weight, and to preserve the quality in its highest degree of condition and fineness. —*Lawrence.*

One of the completest sheep-yards I have seen is that which Mr. Thurlow has made at Gosfield, partly by means of stubble stalks, but the space well enclosed; a large flock may be under cover or exposed at their pleasure. In the centre is a thick stubble stack, which forms a double shed. He finds it of incomparable use, inasmuch as he

* The account of this crop given in the Massachusetts Agricultural Repository, is as follows: the land (a meadow,) was manured, ploughed, and planted with Indian corn the first year; the crop was abundant. The next year it was covered with very rich manure, and sown with hemp. The crop was large and heavy. The land was then ploughed twice and sowed with bald wheat, one bushel and three quarts to the acre. The produce was two hundred bushels of good, clean, heavy wheat, from the four acres. About half an acre of the hemp was not pulled until the seed was ripe, by which the sowing of the wheat was delayed too late in the season, and the crop was diminished in consequence on that part, six' or eight bushels, as supposed.

intends to convert all the straw of his large farm into dung, and to leave off buying bullocks for that purpose.—*Arthur Young.*

The late Gen. Murray's standing folds were equally well contrived, inclosing an area of 57 yards in length, and 20 broad, containing 140 square yards. About 700 ewes were folded in it at night, and for that number it is more than a yard and a half for each sheep. All round it was a shed nine or ten feet wide, and also across the middle which latter was open on both sides. A rack for hay, placed against the wall, which was boarded, surrounded the whole; and another, which was double, to be eaten out of on both sides, stood along the central shed; under the rack was a small manger, in which the food was given.—*Ib.*

A cool moderate temperature is more favourable to the production of fine wool, than excessive heat; and were the sheep of Spain, like those of England, unprotected against the effects of climate, I should have no hesitation in saying, that the situation of that country would be, in some respects, worse than that of our own island, and more unfriendly to the growth of a fine even staple. But to the other qualities, the soundness and softness of the fibres, our frequent rains are very prejudicial, unless the sheep be sheltered and protected from their effects.—*Bakewell.*

To preserve all the best qualities of wool in the Spanish breed of sheep, it will be necessary to attend to the three following objects: The first in importance, is the purity of the breed. The next, that the fleece be covered by nature with a copious yolk, or being deficient that it be supplied by art; nor should the unctuous covering of the wool be absorbed by a mixture with the soil on fallows, or washed away by the rain. Lastly, that the sheep be kept dry, sheltered from the extremes of heat and cold, and their quantity of nourishment regulated.—*Ib.*

The bad effects of water upon the pile, while growing, may be owing to the readiness with which it mingles with the yolk, and carries off a quantity of that animal soap, which is so necessary to the good quality and even existence of the fleece; for if care be taken to prevent this, by the skilful application of tar mingled with butter, which act as repellants to the water, the wool part of the staple which grew after the mixture was applied, contains a sufficient supply of rich and nutritious yolk, and is a much superior sort of wool to those parts of the pile which have been exposed without protection, to the dripping wetness of the wintry season.—*Luccock.*

Mr. Bakewell is so fully convinced of the utility of greasing, that he advises it immediately after shearing, and again in October. In his opinion, the trouble and expense of it, twice a year, will be well repaid by its beneficial effects upon both the carcass and fleece of the sheep, in every part of Britain. He observes, by the first greasing, the wool will be covered and defended from the action of the soil, when the particles are most pulverized and active, and it will be kept soft and moist during the parching heat of July and August; and that he has reason to believe, that the top of the staple of a greased fleece would not become harsh and discoloured, which is frequently the case with English wool. Additional and very powerful inducements to spring and summer greasing, are the following: The ointment destroys the sheep tick, and has a tendency to prevent cutaneous distempers, and to preserve sheep from the stroke of the fly. Farther, a considerable quantity of wool will be saved, which is torn off by sheep

when rubbing themselves, in order to allay the irritation of the skin, occasioned by those causes. The ointment resists the action of the moisture more powerfully than could the natural yolk of the wool; and Mr. Bakewell gives an example of the superior warmness and dryness apparently enjoyed by greased sheep, on the mountain sides, where greased and ungreased browsed together.

The following is given in the Northumberland preparation: From 16 to 20 pounds of butter are placed over the fire and melted; a gallon of tar is then added, and the mixture is stirred until the two substances are well incorporated, and form a soft tenacious ointment. The care always necessary in the application of ointments to the sheep, is especially so in this case; for, says Mr. Bakewell, *if the ointment be merely rubbed on the wool, it collects on the top of the staple, attracts and mixes with the soil, and is rather injurious than beneficial to the fleece.* The staples of the fleece are to be divided with one hand, and the ointment applied to the skin with the finger of the other hand. by which means the ointment is softened by the warmth of the skin, and equally diffused throughout the fleece. The quantity required will in course vary with the size of the sheep, but generally, and in the lighter mode of greasing, one gallon of tar and 20 pounds of butter will be sufficient for forty or fifty sheep.—*Lawrence.*

An unfavourable change takes place on shorn wool, kept long in a very warm and dry temperature; the fibres become indurated, rigid and elastic, and acquire the properties of the hard wools. The greater the degree of warmth, the more speedily will the effect be produced. Wool which has been shorn three or four years, will not spin or fill so well as when kept only one year. A dry situation is necessary for the preservation of wool, which however at length loses its natural moisture, and becomes hard, like wool of limestone districts. —*Bakewell.*

Sheared sheep turned into a newly mown pasture, their coats attract the short ends of grass left by the scythe, and remain sticking in the bottom of the fleece, until in the end they are rolled up with it. These, with any dried vegetable particles, such as hay seeds or chaff, falling from the rack into the coat of the sheep, occasion much extra trouble and expense in the manufacture of the wool, since, if left, they would be wrought into the substance of the cloth, whence they may be extracted by holes made, to be afterwards repaired at the fulling mill, or by the fine drawer. Hay in racks should be upon the level with the heads of the sheep, and the staves by no means too wide apart, since some sheep, particularly the Spanish, are the most wasteful animals in the world of their provisions.—*Luccock.*

The wool grower is counselled to place no dependence upon accidental and external circumstances, for the production of good fleeces, but to rely entirely and with confidence upon the properties with which nature has endowed his sheep, the perpetuity of animal properties being scarcely anywhere more strikingly exhibited, than in the certainty and regularity with which the parent sheep convey to their offspring their own distinguished characteristics. Breed is of the utmost consequence. It is the basis upon which all the improvements of the flock must be founded; the only source of hope, that attempts to produce fine wool will be followed with success. The kind of wool depends entirely on the species of sheep which bears it; and the soil and its products, or other external circumstances, have no other effect

than to vary the quality of the sample, the wool itself still remaining true to its species, long, short or mixed. Long and universal experience has established the fitness of heavy, coarse woolled sheep for rich grazing grounds and marshes, confining the light and short woolled stock to the hills and higher pasture. Nevertheless, fitness and propriety, not absolute necessity, have given birth to such arrangement; since short and fine wool might be grown in the low grounds, and long wool in the upper, with an additional expense of winter keeping.—*Lawrence.*

Apples for Cattle and Swine.

[FROM THE SILK CULTURIST.]

By the following, which we copy from the Brattleborough Messenger, it will be seen that the value of apples as food for cattle and swine has been satisfactorily tested by experiment. We have heard of several farmers in this this region, who have made the same experiments and with similar results, and we have no doubt they will make more value of pork than they will cider, or cider brandy. Some farmers have cut down their apple trees under the mistaken notion, that their fruit was worthless for any other purpose than distillation, and are now regretting their folly when it is too late to remedy it. We regret also to learn that some farmers in Massachusetts, have destroyed several mulberry nurseries, by pulling up and throwing into the highway the young trees, under a like mistaken impression, that they should never derive any benefit from them. Such indiscreet and impatient farmers should remember the two following Turkish maxims, and govern themselves accordingly. "The fruit tree is always liable to be stoned." "With patience ver-juce becomes sweet, and the leaves of the mulberry become silk."

Mr. Editor,—Allow me through your columns, to lay before your readers a few facts on this subject, which may, perhaps, prove advantageous to farmers.

About ten years ago in that part of New-York where I resided, it was found by actual experiment to be a fact, that hogs turned into an orchard with only the slops of the family, would gain two pounds per day. In 1828, while living with Mr. C., of Buckland, (Mass.) I persuaded him, though with much difficulty, to let me give apples to his hogs, during his absence. He was gone nearly a fortnight, and on returning, came into the garden where I was, and says, "S——, what in the world have you been doing to my hogs since I have been gone?" I was startled, and answered, "I don't know, Sir; why, what is the matter?" "Matter! why I could not get one out of his stye this afternoon." I was really afraid that I had somehow killed his best hog, and exclaimed, "why what *is* the matter?" "I should think you had been stretching their skins a little, for I never saw hogs fatten so fast in my life." "I have given them apples a plenty," was the reply.

A man in Brattleborough last week, on showing me a hog that weighed nearly fifteen score, said, "here is a hog I am fattening entirely on sweet apples, boiled: father thinks they are better for hogs than potatoes."

A man in Guilford, conversing on the same subject, said to me—"there is a hog that will weigh over two hundred. I brought it home

in July on my back. I have given him nothing but apples and a little slops for drink. I had no thoughts of his thriving so well; and my pigs do nicely on nothing but sweet apples."

To this fact I might add scores of similar ones; but a word to the wise is sufficient. Sweet apples are better than sour ones, an occasional meal of the latter, for store or fattening hogs, I verily believe will be found to make them grow or fatten faster than so much corn. Hogs partly fattened become cloyed, dainty and somewhat restive, and apples are just the thing to relax and open their intestines, and give them appetite and variety. And there is withal a deal of nourishment even in our apples. A meal every day, or even every other day, will help to put on the flesh faster than any other thing. Let any reader who doubts, just try it for himself, and he will be surprised at the effect. A trial can certainly do no harm. Store hogs having a plenty of apples, sweet or sour, or both, will thrive remarkably well.

Apples are also good for cattle, and even for cows. On this point allow me to state what I have seen, and therefore, know to be true. I proposed to this same Mr. C. of Buckland, to give apples to his cows. "No, by no means," said he, "nothing will dry them up so fast." This confirmed the numerous instances of cows getting into the orchards and becoming dry. But after a while he consented to let me try it. I did try it perhaps ten times, giving them apples for a few days, weighing their milk, and then doing the same without feeding them with apples. They gave from a quarter to one half more milk when they had apples than when they had none. The experiment satisfied Mr. C. and he bade me put up near two hundred bushels of sour apples for his cows and hogs. He gave a few occasionally to his horses. I think it was January before we gave out the last.

Ripe apples are peculiarly good for the human constitution, especially when taken in the fore part of the day. And why not equally as good for beasts? I know that an opinion generally prevails that sour apples will dry up milch cows quicker than almost any thing else: and so they will when taken in too large quantities at a time. Let cows break into an orchard and fill themselves with apples until they can scarcely move, and it will dry up their milk—but no more than green corn will. Too many potatoes eaten at a time will have the same effect. But this argues nothing against a moderate quantity and no more in the case of apples than that of corn and potatoes. Let any man begin with a small quantity, say less than a peck, and increase the quantity as they become accustomed to them, and a hundred to one if he does not find the growth of both store and fattening cattle and hogs as well as the milk of cows, to be thereby increased from a quarter to one-half.

But it is objected that cattle are liable to get "choked" by them. So they are when they break into an orchard and you run to get them out. They will go to one tree and fill their mouths, and before they have masticated these sufficiently to be able to swallow them, they again fill their mouths, greedy to secure as many as possible. But let them go quietly to a pile and take their own time for eating, and there is little or no danger of their choking.

Now if these things are facts, let me in conclusion ask if it is not evidently the design of God, that we give our superabundance of fruit to our stock, rather than that we should distil it into poison, the effect of which is most destructive to the mind and body of man?

A HAS BEEN FARMER.

On Fattening Hogs.

[FROM THE GENESEE FARMER.]

Those who have a plentiful supply of apples, will find it a very good as well as economical way of commencing the fattening of hogs, to turn them into the orchard, to get whatever fruit may fall from the trees. An orchard of one or two hundred trees in moderate bearing, has been found to furnish food enough for upwards of a dozen hogs throughout the greater part of autumn, merely by their eating those which occasionally fall, and without interfering with the main crop of winter apples. Hogs supplied in this way with food become fat nearly as fast as when fed on corn, and some farmers are in the practice of feeding them with nothing else, (except grass,) until within a few weeks of the time of killing, when dryer and more solid food is employed to finish the process,

Food for hogs is always much improved by cooking; and where this is practicable it should always be done. Some kinds are very well prepared simply by steaming them. Of these are pumkins, potatoes and apples. A very simple apparatus for steaming is made thus: a cauldron or kettle is first placed in an arch, and to this is fitted closely a tub, or hogshead open at the top, with the bottom bored with numerous holes to allow the steam to pass through from the kettle to the food which is placed in the hogshead above. When meal is to be steamed, a cloth is first spread over the holes, to prevent its falling into the kettle below. A pipe or tube is fitted at one side within the hogshead, through which water is poured into the kettle to supply from time to time the waste by evaporation. This pipe is to be stopped with a plug during the boiling of the water to prevent the escape of the steam.

A method still better than steaming, whenever any kind of ground grain is used as food for hogs, is boiling it with a large quantity of water. Henry Colman found by frequently weighing his hogs, and keeping an accurate account of their food, that one peck of Indian meal mixed and boiled with a five pail kettle of water, produced very nearly as great an effect in fattening, as when half a bushel of meal was used when prepared in the same kettle with an equal quantity of water. This was probably owing to the better preparation of the meal in the first instance, by its being more thoroughly cooked when in a larger quantity of water, and by its absorbing more water and swelling its bulk to a greater degree.

Experiments which have been made to furnish strong evidence in favour of fermented over unfermented food for hogs. In the estimation of Arthur Young, the best method of converting any kind of grain into food for swine, is grinding it to meal, mixing it with water in cisterns, at the rate of five bushels of meal to one hundred gallons of water, stirring it several times a day for a fortnight during warm weather, or three weeks during colder, at which time it will have fermented, and become acid; it is then fit for use. It is always necessary to stir it before feeding. It will be found necessary also to keep two or three cisterns fermenting in succession in order to keep a constant supply.

A writer in the British Farmer's Magazine, says, "I always fed my pigs on sour food, which I have invariably found to fatten them faster, and make the flesh firmer and whiter, than when given in any other state." The following is his method of preparing. The

potatoes are steamed, and while quite hot are beaten to a pulp, and mixed with bran in the proportion of 28lbs. of bran to a sack (240lbs.) of potatoes; this mixture is put into a vat to remain ten or twelve days until quite sour. It is then fit for feeding. When the hogs are to be made uncommonly fat, barley meal is subsequently substituted for bran, and gradually increased until it amounts to half the weight of the potatoes. If the quantity of meal is greater than the potatoes will moisten, water should be added to make a thick paste. But it must never be given until fermented.

In whatever way grain is fed to hogs it should always be ground to meal. The increased advantage thus obtained, will in almost every case much more than compensate for all the trouble and expense attending it.

In almost every case, very decided benefit is derived from mixing different kinds of food, instead of feeding out each kind alone.

Remarkable Fecundity of a Ewe.

[FROM THE FARMER'S REGISTER.]

Mr. William Nottingham, sen. has at his farm near Eastville, (Northampton, Va.) a ewe which has brought 20 lambs in 7 years and 2 months, from the first to the last yeaning; and omitting the last, the first 19 lambs were produced in less than six years. The following dates and numbers were copied from the written memoranda kept by Mr. Nottingham, on whom, as a man of observation and accuracy, the most entire reliance may be placed.

The ewe was yeaned in February, 1827.

In February, 1828, she brought	2 lambs.
February, 1829,	4
November 1st, 1829, (being 7 in 19 months.)	3
February 7th, 1831,	3
March 10th, 1832,	3
January 18th, 1833,	2
December, 31st, 1833,	2
April 13th, 1835,	1

None of these were supposed to be premature births, and as large a proportion of the lambs lived as could have been expected in ordinary flocks, from births as they usually occur. Great care was generally taken of the mother, but owing to particular occurrences, she was sometimes greatly exposed. Her four lambs were yeaned at a birth, when out in a severe snow storm, and all (I believe) died in consequence. The ewe was raised as a house lamb, and is of the common breed. She was the only ewe kept on this farm, and has been always fed abundantly. When giving milk, her udder was stated to be more like a cow's in size, than that of a sheep. But if her fecundity was caused altogether by high feeding, it would seem that the same effects may be continued in her race by like treatment. Some of the female lambs of this ewe were given to Mr. Nottingham's sons, and have been kept as breeders, with the like abundant supply of food. Of these, "one has had 4 lambs at one time, and three at another time—another had 4 lambs at her first and only yeaning—and a third has had 3 lambs at one yeaning." These latter facts were also furnished me in writing by Mr. Nottingham's son. I omitted

asking what proportion of these were raised—and did not note down the proportion of those lost by the old ewe.

Mr. Nottingham's flock of sheep is kept on grazing land on the sea-side, and the mother of this family has been the only ewe kept at his house. In addition to this peculiar situation, she had the company every year except the last, of more than one male—as several ram lambs were brought home from the sea-side pasture at shearing time, to be killed in the course of the year. Upon these facts, and his observations, Mr. Nottingham has formed the opinion that the several lambs of each yeaning, had different sires—and that the number of males in fact determined the number of lambs. Whether this strange opinion is well founded or not, Mr. Nottingham is so sure of it, that he has latterly more than once before the yeaning stated correctly the number of lambs that would be produced. The last time there was only one male with her. E. R.

July 13th, 1835.

The improved Pocket Chondrometer.—Skinless Oats.

[FROM THE FARMER'S REGISTER.]

This being a very useful little implement, and probably not generally known to your subscribers, I take the liberty to send you a description of it, together with a copy of the printed table pasted on the inside of the small box containing the implement itself. Its use is to ascertain the weight per Winchester bushel, of all kinds of grain or seed, which it does very accurately. The principle on which it is constructed is that of the steelyard. It consists of a very neat little brass standard, six inches high, with a circular bottom about two inches diameter, a small bar about nine inches long, part brass and part steel—the brass part graduated, and having a small brass weight made to slide on it so as to mark by its edge the number of pounds per bushel, of the grain or seed intended to be weighed. For the other end of the bar there is a little brass bucket made to contain about a gill, struck measure, which is to be carefully filled with whatever you design to weigh, when the bar is fixed on the standard, and the brass weight being moved until it balances the filled bucket, ascertains precisely, the weight by the struck Wincester bushel.

Copy of the accompanying Table.—Seventeen specimens of marketable grain and seed.

Wheat is from	55	to 63lbs.	per bushel;	mean weight 59
Rye,	50	56	- - - -	53
Barley,	45	49	- - - -	47
Red clover,	60	64	- - - -	62
White do.	66	70	- - - -	68
Dutch clover,	65	71	- - - -	68
Hemp.	38	42	- - - -	40
Linseed,	44	50	- - - -	47
Turnip,	48	50	- - - -	49
Oats,	35	42	- - - -	38½
Meadow grass,	10	18	- - - -	14
Rye do.	12	20	- - - -	16
Cinque foil,	22	28	- - - -	25
Peas,	62	67	- - - -	64½
Small beans,	60	66	- - - -	63
Canary,	54	56	- - - -	55
Rape,	47	50	- - - -	48½

The use of this little implement will be obvious, I think, at first sight; for it furnishes, at once, a more convenient and expeditious mode than any I have known tried, of ascertaining the comparative weight of all our varieties of wheat, corn, rye, and oats; and as their value generally, is in proportion to their weight, it is a matter of some importance, as well as curiosity, for every farmer to possess so easy a means of ascertaining which is the heaviest. I have very often used this instrument, and in several instances, have sold my wheat by it—the purchaser being perfectly satisfied with this mode of determining the weight. By this I find the weight of the skinless oat to be 47lbs. whereas the heaviest oats in England, (as you will see by the table,) weighs only 42lbs. As you may never have seen this new variety, which has lately been introduced into England from China, and cultivated with great success, I send you a few grains as a sample.* Last spring I purchased from one of William Prince's agents, in our neighbourhood, a single quart, at the rate of $16 a bushel!! One pint of these I drilled in my garden, nine inches apart, the wide way, and two inches the other, as near as I could prevail on the hands employed to drop the grains at that distance; but they were probably nearer. In this way the pint sowed 247 square yards, and produced 116 pints of such grain as I send you. The produce would have been something more; for three spots, each about six or seven feet square, were lodged, and consequently injured. The average height, when ripe, was about four feet, and the appearance then, by far the most beautiful of any small grain I ever saw. From the looks of the grain I should judge it would make very good flour; but for horse feed it must certainly be vastly superior to any other oat yet discovered. To judge by my single trial, they will make at least as much, by measure, as any of the kinds we cultivate, and will so far exceed them in weight as to give them a very decided preference. Be all this, however, as it may, I have determined to sow as many bushels of them next spring, as I can procure: not however, at sixteen dollars a bushel.

JAMES M. GARNETT.

Management of Bees.

[FROM THE GENESEE FARMER.]

Mr. Tucker,—In the Genesee Farmer of August 1st, one of your subscribers from Onondago County writes—"I commenced keeping bees last spring on the plan of Ulmus, in a long box, &c. but they have sent out swarms as usual, although there is room enough at home. I wish I could find some certain way of managing them, other than in separate hives." R. Honey, also, of North Union, says—"I wish that some of your correspondents would be so kind as to give a description through the medium of the Farmer as to the best mode or manner they know of, by experimental knowledge, of constructing a bee-house, and give the particulars of the internal regulation and arrangement of their hives, boxes, &c., together with the improvements they may have made," &c.

In compliance with their wishes, and those of other gentlemen similarly expressed through different channels, I send you a statement of the manner in which I have managed my bees of late, together with a description of the hive recently invented and patented by me.

* This have been cultivated near Charleston, by A. G. Rose, Esq. See his letter, page 130.

I would remark that I have kept bees in a hive of the description given below four years, and in all that time they have shown no sign or inclination for swarming; and in consequence of ventilating the hive in the manner I do, they have never been driven outside the hive to take fresh air, as they often are out of our old fashioned hives for no other reason than that the air becomes so heated as to be insupportable within.

The hive should be made of boards, of a size say three feet high, three feet eight inches long, and one foot eight inches deep, (standing on legs like a bureau,) or any other convenient size, to suit the taste of the builder. This should be set in a room in the upper story of a house, or other building, with the backside against the wall of the building. In the front side of this hive should be a door sufficiently large, (say two feet high from bottom, by one and a half feet wide,) to open and examine the internal concerns of the hive at pleasure. This door should be cased within, and hung with hinges in the ordinary way, with a wooden button or a lock to hold it fast when shut. The cover to the hive also, which should be made of a board an inch thick, should be hung with hinges on the back side, precisely in the manner of a chest lid, and may have a lock to fasten it in front, if necessary. The cover should project over the hive in front and at the ends, sufficiently to receive mouldings underneath. These mouldings, as also the casing inside the door, will be essentially necessary, in order to hide the cracks and thereby shut out all destructive insects, and also to exclude the light. Underneath this cover, in the top of the hive, are to be four small open boxes, each extending from the front to the backside of the hive, and sufficiently wide, so as in the aggregate to just fill the top of the hive. They should fit so close as not to admit of the bees passing up and down around the sides of the boxes, and they should each be about ten inches deep. They should be placed in an inverted position in the hive, and should rest upon a tier of slats, or narrow strips of board, extending from end to end of the hive, and placed at about half or three-fourths of an inch from each other. About one foot below these slats should be placed another tier, in like manner as the first, with the exception that the last may be placed a little wider apart than those on which the boxes rest. These tiers of slats should severally rest upon two narrow strips of board nailed or screwed on to the end boards of the hive, and the slats themselves should all be fastened in their places by nails or screws.

It is intended that the bees, in their accustomed manner of working, shall first fill the boxes, then work from the slats below down to the second tier of slats, and from these again down to the bottom of the hive. In the back side of the hive should be three apertures, which should extend through the wall of the house or building, into which three tubes should be inserted of sufficient length to reach from the inside of the hive to the outside of the house, the ends being cut slanting on the upper side, to make a lighting place for the bees. These tubes should be placed in a triangular position, one above and two below. The upper one should enter the hive just below the upper tier of slats on which the boxes rest. The entrance through this tube should be four inches wide, by half an inch deep. The two lower tubes should enter the hive just below the second tier of slats, and should each be three inches wide, by half an inch deep. All the tubes should be inclining a little downward from the inner to the outward ends, that the water from without may drop off at the ends, and not run into the hive. These tubes should be the only places for

the bees to pass into and out of their hive. In the four boxes above mentioned, there should by holes cut three inches wide by half an inch deep near the upper sides of the boxes, so that the bees may pass freely from one box into another, as occasion may require. There should also be three small apertures cut in the side of the boxes directly over the holes last mentioned, to the top of the boxes, three inches long by one-fourth of an inch, or a little more, in width, extending up to the cover of the hive. These should be covered by a piece of millinet let loose on the top of the boxes, to prevent the bees passing up through them. In the cover of the hive should be formed three groves, extending from the aperture last mentioned, to within about an inch of the back side of the cover, and there intersecting a mortice leading from thence to the back side of the cover. This mortice it will be seen, must be cut in the edge of the board forming the cover, and should be three inches long by half an inch deep; and should be covered on the outside by a piece of fine wire screen, or a piece of millinet, sufficiently open to admit a free circulation of air through it, but not so open as to admit of flies or other insects to pass in. This mortice and those grooves, in connexion with the apertures below, are to serve as a draft through which the heated air in the hive and the perspiration of the bees may escape, while at the same time a constant supply of fresh air from without is conveyed in through the tubes.

When a hive of this description is obtained, the bees should be hived into one or more of the small boxes and placed in the hive, or if they are already in a hive of common construction, by turning it bottom side up, and placing one box at a time on the top of it, they can easily be driven into the boxes and placed in the hive, where they will immediately go to work. Here they will remain perfectly secure, and neither disturb the inmates of the house, or be disturbed by them.

Some of the benefits to be derived from the management of bees in the manner here recommended may be stated as follows, viz:—1st. By keeping bees in the house, the owner, or bee master, may exercise absolute control over his property, and instead of having it wrested from his hands improperly, appropriate it to its own use. 2d. The bees would be more secure from the inclemency of the weather; neither the scorching rays of a summer's sun, or the chilling winter winds, would effect them; they would also be kept both dry and comfortable, and consequently healthy. 3d. They would be secure from destroying insects. The hive should be so perfectly tight within the house, that nothing could molest them: and the tubes being the only entrance from without, it is believed they will be too high and too much secluded for insects, especially the bee-moth, that fell destroyer of the honey bee, to enter. 4th. They may be carefully examined at all times, to see if an enemy gets among them, and also how they progress in their work. 5th. They will not be subject to losses by swarming, as it is well known that bees will never swarm while they have sufficient room for their operations. If, however, they should become too numerous at any time to occupy one hive to advantage, they may be divided in the following manner, viz: prepare another hive of the same size and construction with the one the bees occupy, place it in the room where it is to stand, then in a stormy day or evening, when the bees are all in their hive, take out all their boxes, with all the bees that may be in them, and place them in the new hive,

and put the boxes belonging to the new hive into the old one at the same time. This will divide them nearly equal, and if either becomes too numerous again, divide them again in the same manner, (or connect the two hives by a tube, so that the bees can pass from one into the other,) remembering always to stop up the tubes of the old hive for one or two days after dividing a swarm, or until the bees in the new hive begin to work well in and out of the tubes of their new habitation; then unstop the tubes and all will work well. 6th. Honey may be taken from them at any time, even in the midst of summer; if the owner wishes a box of fine white honey, he has but to take a spare box with him, and take out one of the boxes, suppling its place with the spare one; then take the box out of doors and turn it bottom side up, and rap on it until the bees all leave it. The bees will all return to their hive again, while the owner may enjoy in an eminent degree the fruits of their industry. 7th. The owner should be careful to leave honey sufficient in the hive for the use of the bees through the winter, which he may well afford to do, as it is well known that 10 or 12lbs. will winter a swarm of common size, even as far north as latitude 42 or 43 degrees. Then in the spring the whole should be taken away, first by clearing the boxes above, and then by cutting the combs from the slats below.* The boxes may be cleared by taking them out of the hive, one at a time, turning it bottom side up and placing an empty box on it, and driving the bees into the empty box, which place in the hive. This may be done in a cool day in the spring without any danger to the one who performs the operation. This is the great desideratum in the art of keeping bees, and with hives of this construction you can take from them all the honey they have to spare, and still preserve their valuable lives. 8th. Bees work better in a hive that is empty, than in one that is full; and by clearing it out wholly once in the year, and partially at other times, they will always have room sufficient for their operations. 9th. Honey is far more delicate and more valuable when new than when it has been a long time in the hive; and by this process we may always have new honey. 10th. Bees kept in this manner would be much less liable to be robbed by other swarms. Being kept in the house they would be more secluded; other bees would not be so likely to be attracted thither by the smell of honey, and in the course of one or two years, they would become so numerous as to be able to repel any invasion of ordinary swarms. 11th. By keeping the bees in the manner here recommended, they can as well be kept in large towns and cities, as in the country, which is not the case when kept in the open air, and on or near the ground. 12th. As a matter of profit, it is confidently believed that bees kept in this manner, will pay some hundred per cent. more on the capital invested, than any other stock our country will produce; yet instead of producing our own, we import a great quantity of honey every year.

The only improvement I would suggest on the above plan, is, simply, to lay a small piece of board, say 10 or 12 inches square, in the hive on the bottom, so that if a bee-miller gets into the hive she will deposit her eggs under the edges of that board. Then by opening the door and removing the board occasionally, say once a week, you may destroy all the young worms before they get among the bees to do any

* If this operation is performed full early, and it should be early before the breeding season commences, otherwise a quantity of eggs or young bees might be destroyed, a little honey should be left in one or more of the boxes, for the use of the bees until the spring flowers open.

harm. If by opening the door for this or any other purpose, some few bees should fly into the room, as they often do, it is easy to hoist a window and let them out, when they will immediately return to their hive.

Some people might apprehend that bees kept in the house would be troublesome to the family within, but this is not the case. The room might be used for any other purpose as well as though the bees were not there. When the door to the hive is shut and the lid closed, as they ordinarily would be, there is no possibility of the bees getting into the room unless they come in from out of doors, and if they should at any time come in through a door or window, they will be anxious to return as the most timid could desire. When in a room they will often fly against a glass window, until wearied with exertion, they will drop down and die, if they can find no way out.

LEVI H. PARISH.

Brighton, (near Rochester,) Aug. 10, 1835.

Alternating Crops.

[FROM THE CULTIVATOR.]

The present season has afforded a good opportunity of testing the utility of alternating tillage and grass crops: for so far as our observation has extended, meadows of similar quality or soil have been productive in an inverse ratio to their age, *i. e.* the longer they have been in grass, the lighter the product. In some instances the difference has been three to one in favour of the new stocked lands. The more than common difference apparent the present year, we ascribe the want of heavy rains, in the last autumn, winter and spring. The light rains penetrated more readily grounds which had recently been under the plough, and which were comparatively porous and pulverent, than they did those which were rendered in a manner impervious, and which had remained for years undisturbed by the plough. But if grass greatly deteriorates, grains do much more so without heavy dressings of manure, and the alternation of roots. Tillage is admirably fitted to pulverize, clean and prepare the sod for grasses; and grass lays are equally beneficial to tillage crops, by the vegetable matter—the food—which they give to the soil. We always suspect that the man who advertises his farm as "suitably divided into plough, meadow, and pasture land," pursues the old platform system, and that he knows nothing of the immense advantages, particularly upon sands and gravels and loams, which result from a judicious system of alternate husbandry. We do not wonder that such a farmer, now-a-days, should be obliged to sell his farm. Pastures as well as tillage and grass crops, are augmented in value by the alternating system. There are districts which form an exception to the rule; but generally, every acre of a farm, which is not a rock, may, by thorough drainage, be rendered capable of yielding grain, grass or pasture: and the interest of the cultivator would be promoted by subjecting them to this alternation.

PART III.

MISCELLANEOUS INTELLIGENCE.

In our last number of the *Agriculturist*, we inserted Dr. Bennett's statement of the medicinal and other qualities of the *Solanum Lycopersicum*, or as it is usually called Tomato, Love Apple, Jerusalem Apple, &c. In that article he recommends a general use of it raw or cooked; in order that our readers may have an opportunity of using this invaluable vegetable in a variety of forms, we present to them the Doctor's various recipes for its preparation.

The Raw Tomato.—In this state the ripe fruit should be plucked from the vine and sliced up in vinegar, like cucumbers, with a little oil, pepper and salt; or it may be eaten like other ripe fruit without seasonings.

Tomato Sauce.—Parboil the ripe Tomatoes until the skin will slip; peal and mash them; and add to every pound of the Tomatoes one ounce of butter, season with pepper and salt, and simmer over a slow fire until perfectly cooked. If, however, toast should be added to the sauce, the proportion of butter should be increased.

Fried Tomatoes.—Ripe Tomatoes sliced up, and fried in butter, is, to many, quite delicious.

Tomato Pickles.—Pickles are made of the green fruit, by the same process that you would observe in the pickling of cucumbers, or any other article. The ripe fruit may likewise be pickled; and, in fact, it is the preferable article; as it is in that case highly medicinal, and has a much better flavour.

Tomato Catsup.—Take a peck of ripe Tomatoes, (or any other quantity, only observe proportions,) mash them well together, and simmer over a slow fire until they are dissolved, strain through a fine sieve; after straining, (which requires some pains by mashing and forcing the pulp through the sieve with the hand,) add to this liquid, or pulpy mass, half an ounce of cloves, and the same quantity of black pepper grains, one root of garlic, three ounces of horse radish, and a sufficient quantity of salt to make it palatable; boil all those ingredients together over a gradual fire until you reduce the bulk to one-half; then to each quart add two table spoonfuls of vinegar. When it is cool, cork it up in bottles, and in a little time it will be fit for use. It should be placed in a cool cellar, and suffered to remain for some time, as it improves by age. The addition of some English walnut liquor or catsup, will greatly improve its flavour.

Economy and Comfort.—As the season has arrived when every proprietor must procure shoes for his slaves, we think it not amiss to publish the following recipe for making an elastic paste with which to saturate them. The tendency of which is, *first*, to make them perfectly water-proof; *secondly*, to make them last as long again as they would without its use; and *thirdly*, to make the hardest leather soft and pliant, and therefore more easy, and comfortable to the feet. We have said that it will make the leather "perfectly water proof," and in so saying speak from experience, having gunned in a pair of boots saturated with this mixture from early dawn until near night, day in and day out, during each return of the woodcock season, the better part of which time, we were half knee deep in mud and water, and came out with our stocking as dry as when we entered the willow bottom. The following proportions will answer for 50 pair of shoes.

Take 3oz. of Gum Elastic, cut it up in fine shreds, put it into a gallon jug, add to it 3 quarts of *Seneca* oil, let it stand three or four days when the gum will have been dissolved, and the paste fit for use. Stir before using, then rub the *uppers* and *soles* of the boots or shoes well with it, three or four different times, before the fire, while ever the leather will absorb it. The degree of comfort which this mixture will ensure to the wearer of heavy shoes or boots, can only be realized on trial. It might be used with an equally good effect upon the harness and gearing of work horses, and we have no doubt would make one pair last as long as two.

Having given this recipe, we feel it due to candour to say that the merit of its discovery belongs to Mr. Gideon B. Smith of Baltimore.—*Far. & Gar.*

Rice Raised in Maryland.—The Cambridge (Md.) Chronicle, says the crops of rice planted by Major Leary, near that place, has grown vigorously and *matured completely.—Ib.*

Clover for Manure.—The plan of enriching land by turning under a sod or lay of clover, is, perhaps, one of the greatest discoveries that has ever been made in the art of ameliorating soils. Lorain states that he purchased an exhausted farm in Pennsylvania, and by pursuing this mode of renovating, he so improved it that in a very few years he more than quadrupled his crops. A writer in the Hagerstown Torch states, that he so enriched his land in this manner, that it was too fertile for wheat, and he was under the necessity of reducing it by a crop of Indian corn. The practice of many others confirm the fact that clover may be so managed as not only to yield a fair profit as a fodder, but by ploughing the sod after the second crop is taken off, it yields another profit in the shape of manure, and is an excellent one, too, for many of our most valuable crops.

It is best to plough after the second crop is taken off, for the following reasons: Clover, though considerably a perennial, partakes much of the nature of a biennial plant, and does not flower much during the first year. The second year it arrives to maturity, flowers profusely, and, if not cut, ripens its seeds. Its strength for bearing another crop of seed is much exhausted; the most of it, except some young, straggling roots or offsets dies. The time, therefore, to plough it under, is as soon as it has been cropped for the second year, for then the roots are as loose as they probably ever will be, and will afford the greatest quantity of nutritive matter.

By adopting the rotation of crops in such a manner as to bring clover into the succession, and by so dividing your farm that those parts which are most needy shall receive the necessary attention, it may in a few years become renovated, if now exhausted; or, if in good condition, may be kept so very easily, and the same time while undergoing the process, be yielding a profit.—*Gen. Far.*

Preserving Silk-worm Eggs.—The cocoons selected for seed should be firm and of the largest size. After having stripped the floss from them they should be strung together and hung up in a warm airy room or chamber partially darkened. In about two weeks from winding, the moths, will emerge from the cocoons. The male is known by its smaller size and continual fluttering of its wings; after having been paired and remain together during the day, they should be separated by the wings, and the females placed upon sheets of paper where they will deposit their eggs. It is computed that one hundred females will produce an ounce of eggs, and an ounce of eggs will produce forty thousand silk-worms. The papers on which the eggs are deposited should be rolled up and put in tight boxes, and placed in a cool dry cellar, where they will not freeze. If it be required to keep them late in the season for a second crop, it may be necessary to have recourse to the ice-house.—*Silk Cul.*

The Osier Willow.—The Osier Willow is worthy a place on every farm, because it takes up but little ground, requires very little care, and furnishes the best materials for baskets, which are indispensable to the farmer. This, like all the willows, is readily propagated by cuttings. Where it has taken good root, its shoots, in good ground, grow from four to eight feet in a season. These shoots should be taken off every winter, unless very large willows are wanted, and the number is thereby increased. The art of fabricating baskets from them is easily acquired, and may be practised in evenings and stormy days in the winter without cost. For ordinary baskets the osier is used with the bark on; but for neat house baskets they are peeled. The best way to divest them of the bark, is to cut, sort and tie the osiers in small bundles, say early in March, and place the bundles in a pool of stagnant water; and at the season the leaf buds are bursting, the bark will readily strip off. The osiers may then be laid up to be used when leisure will permit. A well made osier basket is worth three or four made of splits. We have them which have been in wear for years, and are yet good. To give them firmness and durability, a good rim and ribs of oak, hickory or other substantial wood, are necessary.—*Ib.*

Salt and Lime.—It is recommended by writers on the subject, to sow salt and lime over ground infested by slugs, snails, grubs, and other insects of their character. Lime when spread over soil in a hot or caustic state, it is stated, will destroy insects and their larvæ or eggs. When it becomes slacked and is held in solution by water, it is readily taken up by plants as food, and forms a constituent part of them.

"It is astonishing," says a writer in the Gardener's Magazine, "how ignorantly neglectful are the cultivators of the soil, when their crops are devasted by slugs not to dress the soil so as to render its surface quite white, during the promise of a few days dry weather, with caustic lime. It is instant destruction to every slug it falls upon, and those that it misses are destroyed by their coming in contact with it, when removing in search of food.

Keeping Sheep.—A correspondent of the New-England Farmer says—"I sow a few bushels of oats to cure, before they are quite ripe, for my sheep. This I have found to be the cheapest and best method to winter sheep, of the many means I have tried. The sheep will eat it all clean, straw and all, and with it grain enough, and that being green, I believe is far better than ripe, to keep them in good order. I never had a distempered sheep that was kept in this way. Two good sheaves a day will keep twenty sheep. Now, say five months, 150 days, 300 sheaves, that would make 12 bushels to the hundred; would be 36 bushels of oats and the straw. If any of your correspondents can do better, and with less expense, I should like to know it."

Uses of the Mulberry Tree.—The wood of the mulberry tree is used for many purposes. Its being compact, pliant, and hard, capable of receiving a good polish, causes it to be sought by upholsterers, turners, and carvers. Its strength makes it useful to the joiner, and its power of resisting the action of water almost as well as oak, makes it good timber for building boats. It is also a very good wood for fuel, and is well adapted for making charcoal.—*Mayet sur le culture du Murier.*

It was observed by Dr. Deane, in 1793, that "the only mulberry in any degree proper for the food or successful culture of silk-worms is the white muberry. (The Chinese mulberry, and some other sorts of mulberry, were not then known in this country.) All attempts to raise them on the common black mulberry will be unsuccessful."

The same writer observes, 'If we are not disposed to make use of mulberry trees for feeding of silk-worms, they would pay for the trouble of rearing them by their fruit and timber."

It is much in favour of the culture of the mulberry tree, that its roots strike very deep into the ground, so that the surface not being impoverished as it is by many trees, whose roots are found more in the upper soil, other kinds of cultivation may be prosecuted around it. Neither its shade, nor the dropping of rain from its leaves, is considered prejudicial to plants growing beneath it.—*Dr. Lardner.*

MONTHLY CALENDAR
OF
HORTICULTURE AND FLORICULTURE
FOR NOVEMBER.

VEGETABLE GARDEN.

It may be remarked in general, that few garden seeds can be sown this month with any great prospect of success. Most plants that are calculated to survive the winter frosts, ought to have been sown in the preceding months; a few, however, will be designated.

Hardy Beans.—The Mazagan and Winter Beans may be planted in this month; should these survive the winter frosts, they will be fit for use early in the spring; they are excellent and early bearers, and although the name of Horse Bean operates against them, leaving an impression that they are coarse and not very palatable, still as an early bean, coming at a season when few vegetables can be procured, it is worthy of cultivation.

The most favourable situation for this species of Bean, is in a warm south border. Let them be planted in rows two feet apart, and four or five inches from each other in the row, and about an inch deep. Should they come up irregularly, they should be transplanted.

Green Peas.—You may venture about the middle of this month to sow Peas for an early crop. Prepare a bed in the warmest and most sheltered part of your

garden. Sow the seeds in drills about four feet distant from each other, about 3 or 4 inches apart in the drill. You may plant Cabbage or Lettuce plants between the rows.

Cabbages.—If you have neglected planting early Cabbages during the last month, you may still venture to plant Savoy or Early York Cabbages in this. For the manner of planting them, see our directtions in former months.

Lettuce.—Weed, hoe and thin your Lettuce plants; a few of the larger ones will now be fit for use.

Radishes.—In the early part of this month you may sow the short top Radish; if the frost is not too severe, they will be fit for use in February.

Onions.—Let the Onions that were planted in October be frequently hoed, be careful, however, only to loosen the earth, and not to draw it much around the plants.

If your small Onions were not planted last month, it is quite early enough to plant them in this. Dig and manure your ground well, divide it into beds 4 feet wide—plant 4 rows on each bed, let the plants stand eight or nine inches from each other in a row. If your small Onions have been raised from seed in your garden, let the tops of the long leaves be cut off before transplanting.

Small Salading.—Sow Cresses and small Salading in some sheltered situation for an early crop.

Celery.—In a dry day, earth up your Celery to whiten. Let the earth be raised within 6 inches of the top of the plant, and be careful that no clods of earth fall into the centre of the plant, as this would occasion them to rot.

Artichokes.—If your Artichokes did not receive their winter dressing last month, they should not be neglected any longer. Let the earth be opened around the roots, take off all the shoots, with the exception of four or five of the largest —place some rotted manure around the stalks covered over with a little earth.

Asparagas.—If your Asparagus beds did not receive their fall dressing last month, let them be attended to in this. Remove the earth down to the roots, cover them with 3 or 4 inches of rotted manure, and replace the earth upon the top.

Ground Artichokes.—(Helianthus tuberosus.)—This is a vegetable too much neglected in our country—it answers well as a pickle, and may be boiled and brought to table mashed with butter like the squash. Let the Ground Artichokes be dug for use, leaving the smaller in the beds as seed for next spring—cover them all over with a couple of inches of manure, and they will come up in the spring, and require no further trouble.

FRUIT GARDEN.

You may begin this month to prune your Pear, Peach, Nectarine and Apricot trees, although the two next months will answer equally well. The trimming of Fruit Trees is of more importance than is usually supposed, and those who are not accustomed to it, would do well to obtain the advice and assistance of an experienced gardener.

Strawberries.—If you are desirous of having new Strawberry beds, and neglected making them the last month, they should be attended to early in this. There are many varieties of Strawberry Plants cultivated in our city, and it has been discovered that the choicest varieties of the Northern States and Europe, will not survive our summer heat. It would be best to choose such varieties as have been successfully cultivated among us.

In dressing your old Strawberry beds, remove the runners and decaying leaves, and give them a top dressing of well rotted manure.

Rhaspberries.—This is a fruit which has been much neglected in our country. The black variety, especially, succeeds well with but little attention, and we have

occasionally seen the yellow and the red cultivated with success. Let the dead branches which have borne fruit last spring be removed, and transplant your young shoots as directed last month.

Fruit Trees.—This and the following month is favourable to the transplanting of all kind of Fruit Trees, especially the Pear, Peach, Nectarine, and Apricot. We say nothing of the Apple, as it has seldom succeeded along our sea-coast.

FLOWER DEPARTMENT.

This is an important month for your future success in the Flower Garden. If your flower beds are not in a suitable state, let the soil be renewed and turned up. Plant Hyacinth, Tulip, Amaryllis, Tube-Rose, Lilly, Ranunculus and Anemone roots, divide your Dahlia roots, leaving those in the earth which you intend shall remain in the old beds, and the remainder may be kept in dry sand, until required for planting in the spring. Sow Sweet Peas, Canterbury Bell, and China-Aster seeds. It is now time to remove your tender plants to the Green-house.

PLANTS, NATIVE AND EXOTIC, THAT BLOOMED IN OCTOBER.

The cold winds and a slight frost in the early part of the last month injured the bloom of many of our native plants. We observed two species of the Gerardia in bloom—a few of the flowers that are usually seen in the early spring, such as the Polygala lutea, &c. have re-appeared. The beautiful blue Gentians, *(Gentiana Catesbæ* and *G. saponaria)* are now in full bloom. The Lobelia Cardinalis, with its beautiful scarlet flowers, and two other species of less beauty—*(the Labelia Amœna*, and *L. kalmii,)* are still in flower, and the Solidagoes, and several species of the Eupetoriums, have not yet disappeared.

Among the Exotics, the Dahlias have succeeded better with us than in any preceding year. In the gardens of Messrs. Bennett, Nicholson, Naser and Webb, as well as that of Dr. North, we have seen them in the greatest perfection, and the number of new varieties raised from seed, is greater this year than we have ever known produced since the introduction of this beautiful flower into our country. We have seen an elegant, as well as very large yellow sweet scented China Rose, produced in the garden of Mr. Bennett, this is the first of this variety that ever bloomed in this State. The Cleome and Chrysanthemums were great ornaments to our gardens last month—we observed them as well as the Tea Rose in great perfection, in the garden of Mrs. Davis. Our city is much indebted to the industry, taste, and perseverance of several gardeners, who have taken up their abode with us, and who deserve our especial notice, on account of the stimulus which they have given to the cultivators of the Flower and Vegetable Garden; among several deserving men, we ought particularly to mention the names of Mr. Howard, who cultivates the gardens of Mr. Bennett and Mr. Lucas. Mr. Tobin, who attends to the gardens of Mr. Webb, Mr. Nicholson, and Dr. North, and Mr. Juruer, who has charge of the garden of Mrs. Rutledge and others.

RICE GRASS, *(Lersia Oryzoides.)*

We have recently seen hay made of this valuable grass in the neighbourhood of this city, which was cured with great ease—it was eaten with great avidity by cattle, and was pronounced by good judges, equal to the best Timothy imported from the North. We feel confident it is the most valuable grass for hay, that is produced in our Southern country. The time for collecting the seed this year was from the 1st to the 15th of October. An enterprising and successful planter of our acquaintance had three bushels of the seed of this grass collected by a servant in a short time, at intervals, amounting to not more than a day, within two miles of our city; he intends to make a fair experiment in cultivating it on his plantation for the Charleston market. We wish him success.